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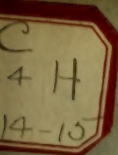
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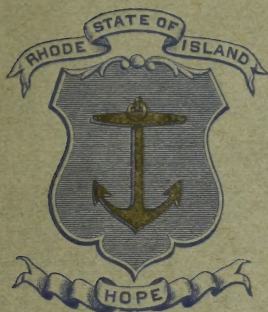
UNIVERSITY OF THE
STATE OF RHODE ISLAND
11 MAY 1915

BULLETIN OF RHODE ISLAND STATE COLLEGE

VOL. XI. NO. 1.

FOR MAY, 1915

CATALOGUE OF THE COLLEGE



KINGSTON, R. I.

1915

PUBLISHED QUARTERLY BY THE COLLEGE

MAY, AUGUST, NOVEMBER, FEBRUARY

ENTERED AT KINGSTON, RHODE ISLAND, AS SECOND-CLASS MATTER

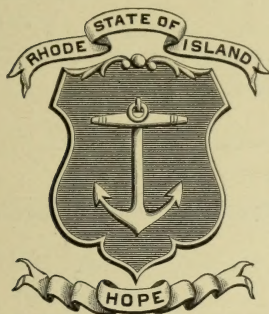
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*In coöperation with United States Department of Agriculture.

College Calendar.

Monday, September 13, 1915,	
	Examination of Entering and Conditioned Students . . . 9 A. M.
Tuesday, September 14	Assembly Exercises, 8:20 A. M.
	Registration 9 A. M.
Wednesday, September 15	Recitations begin, 8:20 A. M.
Tuesday, October 12, holiday	Columbus Day.
Monday, October 18	Registration of Short-Course Agricultural Students.
Wednesday, November 24, 12 M. }	Thanksgiving Recess.
Monday, November 29, 8:20 A. M. }	
Wednesday, December 22, 4:35 P. M. }	Christmas Recess.
Monday, January 3, 1916, 8:20 A. M. }	
Tuesday to Friday, December 28, 29, 30, 31, 1915	Farmers' Week.
Monday, January 3, 1916	Registration for Special Poultry Course.
Wednesday, February 2, 4:35 P. M.	First Term Ends.
Tuesday, February 8	Second Term Begins.
	Registration, 9 A. M.
Wednesday, February 9	Recitations begin, 8:20 A. M.
Tuesday, February 22, holiday	Washington's Birthday.
Wednesday, April 19, 4:35 P. M. }	Easter Recess.
Tuesday, April 25, 8:20 A. M. }	
Friday, May 12, holiday	Arbor Day.
Saturday, May 13	Interscholastic Track Meet.
Tuesday, May 30, holiday	Memorial Day.
Sunday, June 11	Baccalaureate Address.
Thursday, June 15	Commencement Exercises.

RHODE ISLAND STATE COLLEGE

Foundation

The college is one of the so-called land-grant colleges. Of the purpose of these institutions Senator Morrill, the author of the national legislation which brought them into existence in all the states, says:

“The fundamental idea was to offer an opportunity in every state for a liberal and larger education to large numbers, not merely those destined to sedentary professions, but to those needing higher instruction for the world’s business, for the industrial pursuits and professions of life.” Again he says: “It was to give a chance to the industrial classes of the country to obtain a liberal education, something more than what was bestowed by our universities and colleges in general, which seemed to be based more on the English plan of giving education only to what might be called the professional classes, in law, medicine, and theology.”

The college has also a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows:

(1) The interest on \$50,000, which was the net amount received by the State from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.

(2) The annual appropriation of \$15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.

(3) The annual appropriation of \$25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as

follows: "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the State under the Adams Act of 1906, yielding each year \$15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting yearly to \$25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The funds coming from the general government to the State under the Smith-Lever Act of 1914, amounting yearly to \$10,000. This fund is exclusively for extension work in agriculture and home economics.

(7) The annual maintenance fund from the State, of \$30,000, used for all the purposes for which the funds of the general government cannot be used: *e. g.*, for executive and administrative work; for heating, lighting, and maintenance of buildings; for the teaching of modern languages other than English; for the teaching of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroughly revised during the years 1906-07 and 1907-08. The course in home economics for young women was introduced in 1908.

Object and Organization

The function of the Rhode Island State College is to aid in fostering the industrial life of the State, at least in so far as pertains to agriculture, manufactures, transportation, and home making. This it does in three ways: 1. by the investigation and discovery of new truth more or less directly applicable in the industries; 2. by the direct distribution of industrial information to the people; 3. by the organization and administration of definite courses of instruction

designed to fit young men and young women for effective work in the industrial pursuits.

The first of these duties is performed by the

Experiment Station,

for a description of the work of which the reader is referred to the report of the director, included in the report of the Board of Managers for the current year. A statement of its staff organization may be found on page 7 of this catalogue.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all who desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, a

College Extension Department

has been organized, and is in active operation.

The purpose of this department is to carry the instruction of the college to those who cannot come to it for study. Whenever necessary and possible, visits will be made to any part of the State to examine farms, orchards, and gardens; to identify injurious insects or plant diseases, or give instruction in regard to methods of treatment; or to examine soils with a view to suggesting remedies for lack of fertility. General plans for laying out farms and for carrying out the details of any farm operation will be given the fullest consideration. The college is available for consultation at any time in regard to any problem of the farm, garden, or orchard. The fullest correspondence is invited, and conscientious consideration will be given to every letter received. In conjunction with this phase of the work, popular bulletins are issued from time to time, which endeavor to present the gist of agricultural information on various topics without the uninteresting detail which the usual experiment station bulletins must often include.

Whenever possible, arrangements will be made for demonstrations or lectures by members of the college faculty and experiment station staff when called for by any agricultural meeting or neighborhood gathering. A number of lectures on various subjects has been prepared, which can be secured on short notice by any gathering or organization within the State. These lectures are free, the only

charge being the traveling expenses of the speaker. A complete list of the lectures, together with such other information in regard to them as may be of interest, has been prepared and may be obtained by sending a postal-card request to the department.

Eventually an important part of the extension work will be the encouragement of home study through correspondence courses and study clubs supervised by the college. For the present, time and funds will not permit an adequate development of this project except in one or two lines, but advice will be given to any person wishing to take up home study, regarding courses of reading, books, and other literature which may be necessary in connection with such work.

In coöperation with the United States Department of Agriculture, the extension service of the college is now able to offer a system of club work originated by the Federal Department, through which boys and girls can take up definite agricultural projects in their homes and carry them to a successful conclusion. These projects include poultry keeping, orcharding, home or school gardening, corn growing, potato growing, dairy herd records, canning of fruit and vegetables, baking, sewing, etc.

In coöperation with the Federal Department also, an extension instructor in farm management and in agricultural organization has been engaged whose work is to aid farmers in planning their farms and in forming coöperative organizations. A coöperative project which is being pushed at the present time is the establishment of three or more county agents in the State of Rhode Island.

Another extension instructor has been engaged to conduct demonstrations in agronomy in different sections of the State, the purpose of which is to show the best methods of growing crops now common in the State or to make the farmers familiar with new kinds or varieties which may be of value in Rhode Island.

Home economics is receiving attention through an extension instructor who devotes her attention to study clubs, lectures, correspondence, and demonstrations which have for their purpose giving information to the housewives of the State.

Further notes in regard to this work are given in leaflets and circulars issued by the extension department and correspondence from anyone who may be interested therein is invited. This information can be secured by sending an inquiry to the department.

Engineering Extension Work

In the engineering department, as well as in the other branches of the college, the endeavor is to be of the greatest possible service to the people of the State, not only in the matter of providing formal instruction to students coming to the college, but also in giving help and information to those outside the college enrollment who are desirous of extending their technical knowledge, and to whom, for one reason or another, a regular college course is impossible.

To this end there has been offered in the past a short course of two years' duration in which instruction has been given in the elements of engineering. Experience, however, has shown that those most eager to avail themselves of this kind of instruction, and those who would be most helped by it, are unable to leave their regular duties to attend classes at the college.

As a consequence, the short course work in engineering at the college has been discontinued, and in its place has been inaugurated the plan of extension work in engineering. Instead of taking the man away from his regular duties to bring him to the work, the present plan is to carry the work to the man.

This extension work is carried out in two chief ways,—by means of separate lectures on specific topics, and by means of progressive study in organized classes. The subjects presented are all of a technical character and are adapted to the particular needs and capabilities of the classes.

The present requirements for such class work are that a suitable place for meeting be provided, and that the attendance be regular. This regularity of attendance is a matter of the greatest importance, since without it little or no progress is possible.

Classes are now being conducted in various places in The Use of the Slide Rule, Mechanism and Shop Calculations, Power Plant Computations, etc. Instruction in these and any other desired branch of engineering may be had by citizens of the State by complying with the requirements mentioned, the number of such courses being limited only by the available time of the members of the department. Also lecturers will be provided to present various phases of engineering before technical organizations and engineering societies.

The College as an Educational Agency

In its third form of activity, the purpose and work of the Rhode Island State College is to give college training and culture to young men and young women, not in spite of, but through and with, vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroughly efficient worker.

I. THE FOUR-YEAR COURSES

To this end certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in mathematics, pure and applied; the English language as a means of intercommunication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses, moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-winning, but also preparation for citizenship, for moral and social life, have intertwined with the vocational work and study, previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology, and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools. They thus become an integral part of the school system of the State. Young men and young women, citizens of the State and having requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are the agricultural course, the engineering course, the teachers' course in applied science, and the course in home economics.

The Agricultural Course

The agricultural course is intended to give thorough preparation for taking charge of and operating a piece of landed property. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thorough study of the sciences bearing directly on such work, viz.: botany, chemistry, geology, zoölogy, anatomy, physics, bacteriology, and entomology. In addition, it embraces the culture and mental discipline arising from the study of mathematics, English composition and rhetoric, history, drawing, modern languages, economics, and English literature. The course is planned to give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first year; in the sophomore year, one elective is offered; in the second half of the junior year, in addition to the required work for all students in the course, two optional lines of work are offered, one of which must be selected by the student and followed until graduation. The two lines offered are horticulture and animal husbandry. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. Beginning with the class of 1919, all candidates for a degree in the agricultural course shall be required to have spent at least six months in practical farm work before the degree shall be granted. The tabulated course follows:

Freshman Year

FIRST TERM		CREDITS		SECOND TERM		CREDITS	
English I—Rhetoric and Composition..		3		English I—Rhetoric and Composition..		3	
German or French—I or II.....		3		German or French (I or II).....		3	
Math. III—Algebra.....		2½		Chemistry II—General Chem. and			
Math. II—Trigonometry.....		2½		Qualitative Analysis.....		3 [1½]	
Chemistry I—General.....	2 [1½]			Botany I—General.....		1 [2]	
Botany I—General.....	1 [2]			An. Husb. I—Stock Judging.....		2	
Hort. I—Propagation of Plants.....	1 [1]			An. Husb. III—Breeds.....		2	
Freehand Drawing II—Pencil.....		[1]		Hort. II—Vegetable Gardening.....		2	
Psy. and Ed. VIII—How to Study.....		½		Hort. IV—Spraying and Pruning.....		1 [1]	
Mil. Sci. and Tactics I—Drill.....		[1]		Mil. Sci. and Tactics I—Drill.....		[1]	
Mil. Sci. and Tactics II—Theory.....		½		Mil. Sci. and Tactics II—Theory.....		½	

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	German or French.....	3
German or French.....	3	Chem. XIV—Agricultural Chemistry...	3 [1]
Chem. IV—Organic Chemistry.....	3 [1]	Physics I—Descriptive Physics.....	5
Botany II—Botany of Crops and Weeds.	1 [2]	Zoölogy X—Vertebrate Zoölogy.....	2 [2]
Zoölogy X—Vertebrate Zoölogy.....	2 [2]	Geology I.....	2
Civil Engineering I—Surveying.....	1 [2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]		
{ Agronomy II—Forage Plants.....	2		
or			
{ Hort. XIV—Arboriculture.....	1 [1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
An. Husb. X—Vet. Practice.....	3	Agronomy IV—Farm Crops.....	3 [1]
Agronomy III—Soils and Fertilizers....	4 [1½]	Agronomy VII—Farm Management....	2
Hort. III—Fruit Culture.....	2	Mil. Sci. and Tactics I—Drill.....	[1]
Hort. XVI—Landscape Gardening....	1 [2]	Mil. Sci. and Tactics III—Theory for	
Mil. Sci. and Tactics I—Drill.....	[1]	Commissioned Officers.....	½
Mil. Sci. and Tactics III—Theory for		Options: A or B.	
Commissioned Officers.....	½	All of the subjects in one of the following	
		groups must be chosen:	
		A. <i>Horticulture.</i>	
		Botany IV—Forestry or Hort. XV—	
		Tree Surgery.....	2
		Zoölogy. IV—Economic Entomology...	3 [1]
		Elective.....	3
		B. <i>Animal Husbandry.</i>	
		An. Husb. VII—Dairy Practice.....	1 [2]
		Agronomy VI—Farm Machinery.....	2 [1]
		Elective.....	3

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2 ½	History II—Civil Government.....	1 ½
History II—Civil Government.....	1 ½	English V—Shakspeare.....	2 ½
English X—Oratorical Writing and Ex-		English X—Oratorical Writing and Ex-	
temporaneous Speaking.....	1	temporaneous Speaking.....	1
Agronomy X—Agricultural Experimen-		An. Husb. VI—Feeds and Feeding....	3
tation.....	3	Bacteriology I—General.....	1 [2]
Agronomy XI—Plant Breeding.....	3	Mil. Sci. and Tactics I—Drill.....	[1]
Bacteriology I—General.....	1 [2]	Mil Sci. and Tactics III—Theory for	
Mil. Sci. and Tactics I—Drill.....	[1]	Commissioned Officers.....	½
Mil. Sci. and Tactics III—Theory for		Options: A or B.	
Commissioned Officers.....	½	All of the subjects in one of the following	
Elective.....	8	groups must be chosen:	
		A. <i>Horticulture.</i>	
		Botany IV—Forestry or Hort. XV—	
		Tree Surgery.....	2
		Elective.....	9
		B. <i>Animal Husbandry.</i>	
		An. Husb. IV—Breeding.....	3
		Elective.....	8

The Engineering Course

The engineering course has the same duration and the same general plan as that usually offered in the standard technical colleges. Students will follow the course as laid down until the Sophomore year, at which time they must elect one of the four optional lines offered, viz.: mechanical, electrical, civil, and chemical engineer-

ing. Any line of work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and efficient work in the great manufacturing and commercial industries of the state; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. The tabulated course follows:

Freshman Year

For the first year the course is the same for all students of engineering.

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
German or French—(I or II).....	3	German or French—(I or II).....	3
Math. I—Algebra.....	2½	Math. VIIa—Analytics.....	5
Math. II—Trigonometry.....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Chemistry I—General.....	2 [1½]	Mech. Eng. I—Mechanical Drawing...	[2]
Mech. Eng. I—Mechanical Drawing...	[3]	Mech. Eng. III—Pattern Making....	[3]
Mech. Eng. II—Forge and Foundry...	[3]	Mil. Sci. and Tactics I—Drill.....	[1]
Psy. and Ed. VIII—How to Study.....	½	Mil. Sci. and Tactics II—Theory.....	½
Mil. Sci. and Tactics I—Drill.....	[1]		
Mil. Sci. and Tactics II—Theory.....	½		

MECHANICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English II—Argumentation.....	2
English VIII—Interpretive Reading...	1	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1½]
Physics III—Laboratory.....	[1½]	Math. XI—Calculus.....	5
Math. X—Calculus.....	5	Mech. Eng. IV—Graphic Statics.....	2
Mech. Eng. V—Descriptive Geometry...	1 [2]	Mech. Eng. VI—Mechanical Drawing..	[3]
Mech. Eng. XXVI—Indus. Organization and Management.....	3	Mech. Eng. XII—Mechanism.....	3
Civil Eng. I—Surveying.....	1 [2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
Mech. Eng. VIII—Machine Drafting...	[3]	Mech. Eng. IX—Heat Engineering....	3
Mech. Eng. IX—Heat Engineering....	3	Mech. Eng. X—Applied Mechanics....	1½
Mech. Eng. X—Applied Mechanics....	5	Mech. Eng. XI—Hydraulics.....	3½
Mech. Eng. XIV—Machine Shop.....	[3]	Mech. Eng. XIII—Valve Gears.....	3
Mech. Eng. XV—Experimental Engineering a.....	[2]	Mech. Eng. XIV—Machine Shop.....	[3]
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. XVI—Experimental Engineering b).....	[2]
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½	Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2 2/4	History II—Civil Government.....	1 1/4
History II—Civil Government.....	1 1/4	English V—Shakspeare.....	2 2/3
English X—Oratorical Writing and Ex- temporaneous Speaking.....	1	English X—Oratorical Writing and Ex- temporaneous Speaking.....	1
Mech. Eng. XVII—Experimental Engi- neering c.....	2 [2]	Mech. Eng. XVIII—Experimental En- gineering d.....	[2]
Mech. Eng. XX—Machine Design.....	[3]	Mech. Eng. XIX—Heating and Ven- tilation.....	1
Mech. Eng. XXI—Power Plants and Design.....	2 [1]	Mech. Eng. XX—Machine Design.....	[3]
Mech. Eng. XXII—Assigned Work....	3	Mech. Eng. XXII—Assigned Work....	3
Elec. Eng. I—Theory of Direct Currents.	3	Mech. Eng. XXIII—Dynamics of Ma- chines.....	2
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. XXIV—Works Manage- ment.....	1
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	1/2	Elec. Eng. II—Direct Current Labora- tory.....	[3]
		Elec. Eng. IV—Theory of Alternating Currents.....	2
		Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	1/2

ELECTRICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1 1/2]
Physics III—Laboratory.....	[1 1/2]	Math. XI—Calculus.....	5
Math. X—Calculus.....	5	Mech. Eng. IV—Graphic Statics.....	2
Chem. III—Qualitative Analysis.....	[3]	Mech. Eng. VI—Mechanical Drawing...	[3]
Mech. Eng. V—Descriptive Geometry...	1 [2]	Mech. Eng. VII—Machine Shop.....	[3]
Civil Engineering I—Surveying.....	1 [2]	Elec. Eng. IIa—Principles of Elec. Eng.	1/2
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
El. Eng. I—Theory of Direct Currents..	3	El. Eng. II—Direct Current Laboratory.	[3]
El. Eng. IIb—Principles of Elect. Eng..	1	El. Eng. IV—Theory of Alternating Currents.....	2
Physics V—Electrical Measurements....	[1 1/2]	Mech. Eng. IX—Heat Engineering.....	3
Physics VI—Principles of Illumination..	1 [1 1/2]	Mech. Eng. X—Applied Mechanics.....	1 1/2
Mech. Eng. IX—Heat Engineering.....	3	Mech. Eng. XI—Hydraulics.....	3 1/2
Mech. Eng. X—Applied Mechanics.....	5	Mech. Eng. XVI—Experimental Engi- neering a.....	[2]
Mech. Eng. XV—Experimental Engi- neering a.....	[2]	Mil. Sci. and T. I—Drill.....	[1]
Mil. Sci. and T. I—Drill.....	[1]	Mil. Sci. and T. III—Theory for Com- missioned Officers.....	1/2
Mil. Sci. and T. III—Theory for Com- missioned Officers.....	1/2		

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2 2/4	History II—Civil Government.....	1 1/4
History II—Civil Government.....	1 1/4	English V—Shakspeare.....	2 2/3
English X—Oratorical Writing and Ex- temporaneous Speaking.....	1	English X—Oratorical Writing and Ex- temporaneous Speaking.....	1
El. Eng. V—Theory of Alternating Cur- rents.....	3	El. Eng. V—Theory of Alternating Cur- rents.....	3
El. Eng. VI—Alternating-Current Labora- tory.....	[3]	El. Eng. VI—Alternating Current Labora- tory.....	[3]
El. Eng. VIII—Telephone Engineering.	1	El. Eng. VII—Design of Electrical Ma- chinery.....	[3]
El. Eng. X—Transmission of Energy...	2	El. Eng. XI—Electric-Railway Engi- neering.....	2
El. Eng. XII—Assigned Work.....	[3]	El. Eng. XII—Assigned Work.....	[3]
Mech. Eng. XVII—Experimental Engi- neering c.....	2 [2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mech. Eng. XXI—Power Plants.....	2	Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	1/2
Mil. Sci. and Tactics I—Drill.....	[1]		
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	1/2		

CIVIL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1½]
Physics III—Laboratory.....	[1½]	Math. XI—Calculus completed.....	5
Math. X—Calculus.....	5	Mech. Eng. IV—Graphic Statics.....	2
Chemistry III—Qualitative Analysis...	[3]	Mech. Eng. VI—Mechanical Drawing...	[3]
Mech. Eng. V—Descriptive Geometry...	1 [2]	Mech. Eng. VII—Machine Shop.....	[1½]
Civil Eng. I—Surveying.....	1 [2]	Civ. Eng. II—Topographic Surveying...	1 [2]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
Civil Eng. III a—Railroad Engineering...	5	Civ. Eng. III b.—Railroad Engineering...	3
Civil Eng. IV—Graphic Statics.....	2	Civ. Eng. V—Roads and Pavements...	3 [1]
Mech. Eng. X—Applied Mechanics.....	5	Mech. Eng. X—Applied Mechanics.....	1½
Mech. Eng. XXV—Elements of Thermo-		Mech. Eng. XI—Hydraulics.....	3½
dynamics.....	3	Mech. Eng. XVI—Experimental Engi-	
Mil. Sci. and Tactics I—Drill.....	[1]	neering b.....	[2]
Mil. Sci. and Tactics III—Theory for		Geology (I).....	2
Commissioned Officers.....	½	Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics III—Theory for	
		Commissioned Officers.....	½

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2½	History II—Civil Government.....	1½
History II—Civil Government.....	1½	English V—Shakspeare.....	2½
English X—Oratorical Writing and Ex-		English X—Oratorical Writing and Ex-	
temporaneous Speaking.....	1	temporaneous Speaking.....	1
Mech. Eng. XVII—Experimental Engi-		Mech. Eng. XVIII—Experimental En-	
neering c.....	2 [2]	gineering d.....	[2]
Civil Eng. VI—Bridge Details.....	[2]	Civil Eng. VIII—Bridge Design.....	[3]
Civil Eng. VII—Bridge Analysis.....	2	Civil Eng. X—Reinforced Concrete...	2
Civil Eng. IX—Masonry Construction...	2 [1]	Civil Eng. XII—Water Supply.....	3
Civil Eng. XI—Sewerage.....	2	Civil Eng. XIII—Tunneling.....	1
Civil Eng. XV—Assigned Work.....	3	Civil Eng. XIV—Contracts and Specifi-	
Mil. Sci. and Tactics I—Drill.....	[1]	cations.....	2
Mil. Sci. and Tactics III—Theory for		Civil Eng. XV—Assigned Work.....	3
Commissioned Officers.....	½	Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics III—Theory for	
		Commissioned Officers.....	½

CHEMICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	German.....	3
German.....	3	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1½]
Physics III—Laboratory.....	[1½]	Math. XI—Calculus.....	5
Math. X—Calculus.....	5	Chemistry IIIa—Qualitative Analysis...	1 [3]
Chemistry IV—Organic.....	3 [1]	Mech. Eng. XII—Mechanism.....	3
Mech. Eng. V—Descriptive Geometry...	1 [2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays	4	English IX—Debating	1
English IX—Debating	1	History I—Industrial History	4
Mech. Eng. IX—Heat Engineering	3	Mech. Eng. IX—Heat Engineering	1½
Mech. Eng. X—Applied Mechanics	5	Mech. Eng. X—Applied Mechanics	1½
Chemistry VII—Quantitative Analysis	[3]	Mech. Eng. XI—Hydraulics	3½
Chemistry XVI—Industrial Chemistry	4	Chem. VIII—Quantitative Analysis	[4½]
Chem. XXI—Reports and Discussions	1	Chemistry XII—Physical Chemistry or	
Mil. Sci. and Tactics I—Drill	[1]	Chem. V—Organic Chemistry	4 [1]
Mil. Sci. and Tactics III—Theory for		Chem. XXI—Reports and Discussions	1
Commissioned Officers	½	Mil. Sci. and Tactics I—Drill	[1]
		Mil. Sci. and Tactics III—Theory for	
		Commissioned Officers	½

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy	2½	History II—Civil Government	1½
History II—Civil Government	1½	English V—Shakspeare	2½
English X—Oratorical Writing and Ex-		English X—Oratorical Writing and Ex-	
temporaneous Speaking	1	temporaneous Speaking	1
Mech. Eng. XV—Experimental Engi-		Mech. Eng. XXIV—Works Manage-	
neering a	[2]	ment	1
Elec. Eng. I—Theory of Direct Currents	3	Chemistry VI—Organic Chemistry	[3]
Chem. VIII—Quantitative Analysis	[3]	Chemistry XII—Physical Chem. or	
Chem. XVII—Industrial Chemistry	[3]	Chemistry V—Organic Chem.	4 [1]
Chem. XX—Assigned Work	3	Chem. XI—Determinative Mineralogy	[1½]
Chem. XXI—Reports and Discussions	1	Chemistry XX—Assigned Work	3
Mil. Sci. and Tactics I—Drill	[1]	Chem. XXI—Reports and Discussions	1
Mil. Sci. and Tactics III—Theory for		Mil. Sci. and Tactics I—Drill	[1]
Commissioned Officers	½	Mil. Sci. and Tactics III—Theory for	
		Commissioned Officers	½

Teachers' Course in Applied Science

This course is intended mainly to prepare persons to teach in industrial schools those branches of applied science that pertain especially to agriculture and the mechanic arts. In such schools it has been found of especial importance that the teachers be trained in an environment of current thought, sympathetic with the industrial applications of science and intelligently appreciative of the methods and problems of such work. In response, therefore, to the need, and in accordance with an expressed purpose of the Nelson fund from the United States Government, this course has been constructed. The effort has been to make the course effective for its purpose, while at the same time retaining for it that breadth and that cultural influence that are necessary to fit the whole man or woman for social life and are especially important in persons who, as teachers, will exercise large personal influence over immature youth.

In addition to preparation for teaching which this course affords, many of the subjects offered possess vocational significance of importance outside of the field of teaching, as in the practical application of botany, zoölogy, entomology, and bacteriology to problems of

every day life. In these subjects, as well as in agriculture and chemistry, the applied science course makes specialization possible.

The general plan of the course is the same as that of the other two just described. It offers to the student, at the beginning of the Junior year, options in agriculture, biology, and chemistry, one of which he must select in conjunction with certain studies required of all. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
German or French (I or II).....	3	German or French (I or II).....	3
Math. I—Algebra.....	2½	Chemistry II—General Chem. and Qualitative Analysis.....	3 [1½]
Math II—Trigonometry.....	2½	Botany I—General.....	1 [2]
Chemistry I—General.....	2 [1½]	Math. VIII b—Analysis.....	5
Botany I—General.....	1 [2]	Freehand Drawing II—Pencil.....	(1)
Hort. I—Propagation of Plants.....	1 (1)	{ Mil. Sci. and Tactics I—Drill.....	(1)
Freehand Drawing II—Pencil.....	(1)	{ Mil. Sci. and Tactics II—Theory.....	½
Psy. and Ed. VIII—How to Study.....	½	or	
{ Mil. Sci. and Tactics I—Drill.....	(1)	{ Home Economics III b—Euthenics..	1
{ Mil. Sci. and Tactics II—Theory....	½	{ Physical Training.....	[1]
or			
{ Home Economics III a—Hygiene....	1		
{ Physical Training.....	[1]		

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	German or French.....	3
German or French.....	3	Chemistry III a—Qualitative Analysis.	1 [2]
Chemistry IV—Organic.....	3 [1]	Geology I.....	3
Botany II—Botany of Crops and Weeds.	1 [2]	Zoology X—Vertebrate Zoology.....	2 [2]
Zoology X—Vertebrate Zoology.....	2 [2]	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1½]
Physics III—Laboratory.....	[1½]	Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]
Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
Psy. and Ed. IV—General Psychology...	3	Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]
Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]	Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½	Elective.....	7
Elective.....	3	Options: A, B or C.	
Options: A, B or C.		All of the subjects in one of the following groups must be chosen:	
All of the subjects in one of the following groups must be chosen:		A. <i>Agriculture.</i>	
A. <i>Agriculture.</i>		Agronomy IV—Farm Crops.....	3 [1]
Agronomy III—Soils.....	4 [1½]	Zoology IV—Economic Entomology...	3 [1]
Hort. III—Fruit Culture.....	2	Botany IV—Forestry or Hort. IV—Spraying and Pruning.....	1 [1]
B. <i>Biology.</i>		B. <i>Biology.</i>	
Zoology VIII—Histology.....	2 [3]	Botany VI—Plant Pathology.....	1 [4]
Botany V—Plant Histology.....	1 [4]	Zoology I—Invertebrate Zoology.....	1 [2]
C. <i>Chemistry.</i>		C. <i>Chemistry.</i>	
Chemistry VII—Quantitative Analysis.	[3]	Chemistry VIII—Quantitative Analysis.	[4½]
Chemistry XVI—Industrial Chemistry.	4	Chemistry XXI—Reports and Discussions.....	1
Chemistry XXI—Reports and Discussions.....	1	{ Chemistry XII—Physical Chem. or Chemistry V—Organic Chem.....	4 [1]

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2½	History II—Civil Government.....	1½
History II—Civil Government.....	1½	English V—Shakspeare.....	2½
English X—Oratorical Writing and Ex- temporaneous Speaking.....	1	English X—Oratorical Writing and Ex- temporaneous Speaking.....	1
Psy. and Ed. I—History of Education..	3	Psy. and Ed. III—Secondary Education.	3
Psy. and Ed. II—Principles of Education	1	Assigned Work.....	3
Assigned Work.....	3	Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]
Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]	Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½	Options: A, B or C.	
Options: A, B or C.		All of the subjects in one of the follow- ing groups must be chosen:	
All of the subjects in one of the follow- ing groups must be chosen:		A. <i>Agriculture.</i>	
A. <i>Agriculture.</i>		Hort. II—Vegetable Gardening.....	2
An. Husb. XIV—Poultry.....	[2]	An. Husb. IV—Breeding.....	3
Hort. X—Pomology.....	3	An. Husb. VI—Feeding.....	3
Hort. XVI—Landscape Gardening.....	1 [2]	*B. <i>Biology.</i>	
*B. <i>Biology.</i>		{ Botany IV—Forestry.....	2
Agronomy XI—Plant Breeding.....	3	{ or	
Botany III—Trees and Shrubs.....	[1]	{ Hort. IV—Spraying and Pruning... 1 [1]	
Zoölogy V—Entomology.....	1 [2]	Zoölogy II—General Zoölogy.....	1 [2]
C. <i>Chemistry.</i>		Zoölogy V—Entomology.....	2 [2]
Chemistry XVII—Industrial Chemistry.	[3]	Botany III—Trees and Shrubs.....	[1]
Chemistry XXI—Reports and Discus- sions.....	1	C. <i>Chemistry.</i>	
Elective.....	3	Chemistry VI—Organic Chemistry....	[3]
		Chemistry XI—Determinative Mineral- ogy.....	[1½]
		{ Chemistry XII—Physical Chemistry or Chemistry V—Organic Chem... 4 [1]	
		Chemistry XXI—Reports and Discus- sions.....	1

*Bacteriology may be substituted for one of the subjects in the Biological option. See Bacteriology I, II and III, p. 49.

The Course in Home Economics

The object of the home economics course is to fit young women for home making and to provide adequate training for teachers of the various household arts. Nowhere is the application of modern science to everyday life more important than in the home. In no other life-work do women find greater need of scientific knowledge and technical skill than in the intelligent and economic administration of household affairs.

The course includes instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene; and instruction in the care of infants and young children. During one year instruction is given in hand sewing, machine practice, and in drafting, cutting, and making of plain garments. Although the main work is scientific and technical, the importance of artistic and literary training for home life has not been neglected. It is recognized that all the knowledge of right living is needed to assist the student to a broader conception of citizenship as well as in performing the manifold duties of daily life.

Attention has also been given, in planning the course, to the need of students desiring to enter special fields of domestic activity along institutional and educational lines of work.

The entrance requirements are the same as for the other college courses. Thirty-eight of the credits required for graduation are in the home economics department. Students are expected to take the course as outlined below, with choice of electives; but when entered in other courses in the college they may elect certain work in the home economics department, under direction of the head of the department. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
German or French (I or II).....	3	German or French (I or II).....	3
Math. III—Algebra.....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Math. II—Trigonometry.....	2½	Botany I—General.....	1 [2]
Chemistry I—General Chemistry.....	2 [1½]	Freehand Drawing II—Pencil.....	1
Botany I—General.....	1 [2]	Home Economics I—Domestic Art....	2 [3]
Freehand Drawing II—Pencil.....	1	Home Economics IIIb—Euthenics.....	1
Home Economics I—Domestic Art....	1	Physical Training.....	[1]
Home Economics IIIa—Hygiene.....	1		
Psy. and Ed. VIII—How to Study.....	½		
Physical Training.....	[1]		

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	German or French.....	3
German or French.....	3	Chemistry IIIa—Qualitative Analysis..	1 [3]
Chemistry IV—Organic.....	3 [1]	Zoology X—Vertebrate.....	2 [2]
Zoology X—Vertebrate.....	2 [2]	Physics I—Descriptive.....	5
Freehand Drawing IV—Color Problems.	1	Home Economics IV—Foods.....	2 [1½]
Home Economics IV—Foods.....	3 [3]	Physical Training.....	[1]
Physical Training.....	[1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
Psy. and Ed. IV—General Psychology...	3	Chemistry X—Food Analysis or Chemistry XIX—Physiological Chem..	4
Zoology VIII—Histology and Embryology.....	2 [3]	Freehand Drawing III—History of Art.	2
Home Economics VI—Human Nutrition.	3	Freehand Drawing VIII—Drawing....	[1]
Home Economics IX—Sanitation.....	2	Home Economics VII—Home Decoration	2
Physical Training.....	[1]	Home Economics VIII—Dietetics.....	2 [1]
Elective.....	2	Physical Training.....	[1]
		Elective.....	2

Senior Year.

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2½	History II—Civil Government.....	1½
History II—Civil Government.....	1½	English V—Shakspeare.....	2½
English X—Oratorical Writing and Ex-temporaneous Speaking.....	1	English X—Oratorical Writing and Ex-temporaneous Speaking.....	1
Freehand Drawing III—History of Art.	2	Home Economics XII—Home Nursing..	1
Home Economics XI—Hygiene and Care of Children.....	2	Home Economics XIV—Assigned Work.	3 [2]
Home Economics XXI—Home Administration.....	1 [2]	Bacteriology I—General.....	1 [2]
Bacteriology I—General.....	1 [2]	{ Chemistry X—Food Analysis or Chemistry XIX—Physiological Chem.	[4]
Physical Training.....	[1]	Physical Training.....	[1]
Elective.....	5	Elective.....	2

II. SHORT OR SPECIAL COURSES IN DOMESTIC SCIENCE

Where the age and attainments of applicants seem to warrant it, special courses in domestic science for those unable for any cause to take the regular four-years' course will be arranged, so far as the resources of the college will permit. Applicants desiring such special courses should apply before August 15, so as to allow ample time for full correspondence and investigation before a final decision in the individual case is taken on the part of the college.

III. SHORT COURSE IN AGRICULTURE

To meet the needs of those who find it out of their power to undertake a four years' college course, but who, nevertheless, desire to increase their efficiency on the farm, the college offers what is known as a short course in agriculture. Students may with advantage take only a part of the course if unable to remain for the whole time.

It is required of applicants for this course that they be at least eighteen years of age at entrance, that they shall have completed at least the common school, that they shall have a definite purpose in mind in applying for the course, and *that within three weeks after entrance they shall satisfy their teachers that they are sufficiently mature, sufficiently earnest, and sufficiently capable to warrant their remaining for the course.* Every effort will be made to guard this course from becoming a refuge for the idle, the purposeless, and therefore the unsuccessful, and to that end drastic measures of elimination will be used whenever necessary, but especially at the end of the first three weeks of the year.

The course is in no case supposed to serve as a substitute for the regular work of the college either in character or in scope of the subject-matter presented, and does not lead, directly or indirectly, to a degree, a certificate only being granted. Neither is it to be considered as preparatory to the college work. Its particular function is to give, in the shortest, most direct way possible, certain definite, specific, and perhaps uncorrelated information which will be of immediate value on the farm.

Commencing with the college year of 1915-16 the short course in agriculture will be given in two school years of twenty-four weeks, beginning the middle of October and ending the middle of April. The object of this change in dates from that of the regular college course

is to permit those who find it impossible to be away from the farm during the busy season of the year to obtain the advantages of this special training during the slack season.

In order that the seriousness of purpose as regards an agricultural occupation may be assured from those taking the agricultural short course, no student will be permitted to register for the second year's work who has not had at least six months practical experience on a farm. This experience should be obtained upon a farm making a specialty of the line of work which the student intends to follow.

The special work in agriculture treats in an elementary way of such subjects as plant life, soils and fertilizers, vegetable gardening, stock judging, crops, dairy practice, poultry, fruit culture, etc.

Short-course work is of comparatively recent introduction at this institution and consequently is still in the process of development. The tabulated course follows:

First Year

Work commences October 18, 1915. First year subjects run continuously for the year.

	CREDITS
Botany A—Plant Life.....	1 [2½]
Agronomy A—Soils and Fertilizers.....	3 [1]
An. Husb. B—Stock Judging.....	[2]
An. Husb. A—Breeds.....	2
Chem. A—Plant and Animal.....	3 [1½]
An. Husb. H—Poultry.....	1 [2]

Second Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Agron. B—Crops and Rotation.....	3 [1½]	Hort. A—Vegetable Gardening.....	3 [1½]
An. Husb. C—Dairy Practice.....	1 [3]	Agron. C—Farm Management.....	3 [1]
Elementary Zoölogy—A.....	3 [2]	An. Husb. E—Principles of Breeding..	2 [1]
An. Husb. D—Principles of Feeding...	3	An. Husb. I—Farm Buildings.....	[1½]
Hort. B—Fruit Culture.....	3 [1]	Agron. D—Farm Machinery.....	1 [3]
An. Husb. G—Care of Animals.....	2	Hort. E—Spraying and Pruning.....	2 [1½]
		Hort. F—Home Grounds.....	3

The following students received certificates, in 1914, upon the completion of the two years' course in agriculture: Mark Anselm Cassidy, William James Champlin, Howard Lee Forman, John Francis Leslie, Gordon Fenn Pyper, Edmund Johnson Tanner.

IV. SPECIAL POULTRY COURSE

Rhode Island State College in the winter of 1898 gave the first poultry course offered in the United States. Since that date the

course has been offered annually to men and women of sufficient maturity to understand the subject. The work consists of practice, reading, and attendance on lectures and demonstrations. Besides daily lectures by the college faculty, specialists from outside the college are secured to lecture on their various lines. In 1915 the following special lectures were given:

Earl W. Benjamin, Ithaca, N. Y. "Some New Lights on Market Problems."

John C. Graham, Amherst, Mass. "A Ten-Acre Poultry Farm."

Lloyd H. Gledhill, Kingston, R. I. "Incubation, Brooding, Feeding and Management." Several lectures.

William F. Kirkpatrick, Connecticut Agricultural College, Storrs. "Egg Production." "The Cause and Prevention of White Diarrhœa in Chickens." Two lectures.

John A. Kierman, East Providence. "All About Squabs."

Samuel Knowles, Lexington, Mass. "The Profitable Side of Fancy Poultry."

Carroll H. Magoon, West Kingston. "How to Start a Poultry Farm."

R. V. Mitchell, Durham, N. H. "Improvement of Market Poultry." "Fattening Methods." Two lectures.

Henry D. Smith, Rockland, Mass. "Capon and Caponizing."

The course begins January 3, 1916, and continues eight weeks. A circular giving details in regard to the course for the year 1916 may be had by addressing the President of the College.

V. SPECIAL COURSE FOR FARMERS

Convocation week for the farmers of Rhode Island begins December 28 and closes December 31, 1915. Lectures on agricultural subjects are given hourly through the day with abundant opportunity for discussion. The lecturers are members of the college faculty, and specialists from outside the college. The special lectures for 1914 were as follows:

James E. Dodge, Manager Hood Farm, Lowell, Mass. "Rearing the Dairy Animal from Birth to Maturity."

William Stuart, Horticulturist, Bureau Plant Industry, United States Department of Agriculture. "The Potato." "Improvement by Selection and Cultural Practices."

Dr. T. N. Carver, Office of Markets and Rural Organization, United States Department of Agriculture. "The Organization of a Rural Community."

C. C. Hulsart, Proprietor Edgewood Farm, Matawan, N. J. "Truck Farming."

For a circular giving details for the course to be offered in 1915 address the President of the College.

Requirements for Admission to the Degree Courses

UNITS

The requirements for admission are reckoned in units. A "unit" represents the successful completion of a year's study of a subject, to which have been devoted not less than one hundred and twenty recitation periods of sixty minutes each, or their equivalent (*e. g.*, one hundred and eighty periods of forty minutes each). Fourteen units are required. A student may obtain this amount of entrance credit from high-school work or from examination.

GROUPS

The entrance subjects are divided into two groups, A and B. Those in A, unless otherwise indicated, are required of all candidates for admission. Candidates who have not studied algebra the past year are urged to review the subject during the summer before entering college. Observation of this warning will prevent many failures in college work.

GROUP A.

The school year is reckoned at thirty-six weeks, the minimum length.

English.....	108 weeks.....	3 units.
German or French.....	36 weeks.....	1 unit.
Algebra—for engineering students.....	54 weeks.....	1½ units.
Algebra—for agricultural and home economics students, 36 weeks....		1 unit.
Geometry, Plane.....	36 weeks.....	1 unit.
Geometry, Solid—for engineering students only, 18 weeks.....		½ unit.
Physics.....	36 weeks.....	1 unit.
History.....	36 weeks.....	1 unit.

The remainder of the fourteen units must be taken from

GROUP B.*

No subject is accepted for more than the amount here stated or for less than two-fifths of a unit.

Foreign Language.....	216 weeks.....	6 units.
Geometry, Solid—for other than engineering students, 18 weeks.....		$\frac{1}{2}$ unit.
Botany.....	36 weeks.....	1 unit.
Algebra—for students in agriculture and home economics, 18 weeks...		$\frac{1}{2}$ unit.
Chemistry.....	36 weeks.....	1 unit.
Geology.....	18 weeks.....	$\frac{1}{2}$ unit.
Physiography.....	36 weeks.....	1 unit.
Physiology.....	18 weeks.....	$\frac{1}{2}$ unit.
History.....	36 weeks.....	1 unit.
Drawing.....	36 weeks.....	1 unit.
Domestic Science.....	18 weeks.....	$\frac{1}{2}$ unit.
Shop Practice.....	18 weeks.....	$\frac{1}{2}$ unit.
Farm Practice.....	18 weeks.....	$\frac{1}{2}$ unit.

REGISTRATION.

Registration occurs on the first day of each term, from 9 A. M. to 12 M., and from 1 P. M. to 4 P. M. A special fee of one dollar will be charged for registration after the first day of each term.

Each student is required to sign the following form of application before registering for the current year:

I hereby make application for registration as a student in Rhode Island State College for the year. In consideration of such registration and the attendance consequent thereupon, I hereby engage and obligate myself cheerfully to observe and conform to the rules of said college, having specifically in mind, without excluding others, that in relation to hazing and class disturbances. I further engage promptly and on my own motion to withdraw from the college whenever I find myself unable or unwilling to carry out the obligation herein assumed.

METHODS OF ADMISSION

On any or all of the subjects named in both groups, satisfactory standings from any reputable high school will be accepted in lieu of examination, on presentation of a copy of the student's full record in the high school, showing clearly the nature of the work pursued in

*Other subjects not here named will receive due consideration if presented on the application blank, with a statement of the work done.

each subject, time devoted to it, and grade of work done. This copy must be duly signed by the proper official of the school, and must be accompanied by a certificate of good moral character. The latter, however, may be from any reputable source. On application, blanks showing definitely the full nature of the information desired from the high school will be furnished.

Candidates not presenting satisfactory standings from reputable high schools will be examined, over ground corresponding to the number of units attached, on all the subjects of Group A and on such of Group B as they may offer. Examinations for entrance will be held at the opening of the college year in September, as announced in the calendar, page 8.

SPECIFICATIONS OF GROUND TO BE COVERED*

GROUP A

These subjects, with the exception stated, are required of all students to the extent indicated by the number of units designated in each case.

Languages

ENGLISH, 3 UNITS.—In English two aims are sought: first, a knowledge of the language—including the acquisition of an ample vocabulary and power of effective expression—second, some acquaintance with the literature. To attain the first, grammar and composition must be thoroughly studied. Throughout the secondary-school course there should be much practice in writing along a variety of lines suggested by the pupil's experience, his general interests, and studies other than English. Spelling, punctuation, accuracy of idiom, should receive due attention in all written work; while correct and forceful oral expression should also be insisted upon.

To meet the requirement in literature certain selections are to be made from two lists of works—one for reading, the other for closer study. It is hoped to foster in this way a taste for good books and an intelligent appreciation of them. Committing to memory selected passages and reading aloud are strongly urged. In all cases some knowledge of the author's life and his place in literature should be acquired, while a more exacting study of selected texts would lay emphasis on form and style, meaning of particular words and phrases, and the significance of allusions. The list of books prescribed for 1915-16 may be obtained from the nearest high-school principal.

*For any or all of the subjects described below the requirements of the College Entrance Examination Board, upon which these specifications are largely based, will be accepted. A circular stating these requirements in detail and blank forms of application for examination may be obtained by sending ten cents in stamps to the College Entrance Examination Board, Post Office Sub-Station 84, New York City.

GERMAN, 1 UNIT.—During the first year the work should consist of drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry.

FRENCH, 1 UNIT.—The course in French should parallel that in German. During the first year there should be drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry.

Mathematics

ALGEBRA, $1\frac{1}{2}$ UNITS.—The requirement in algebra comprises the four fundamental operations; factoring, highest common factor and lowest common multiple; fractions; linear equations; exponents; radicals; quadratic equations; simultaneous equations involving quadratics; binomial theorem for positive integral exponents. Problems should be given at frequent intervals. Candidates for the courses in Agriculture and Home Economics are required to offer but one unit of this work.

PLANE GEOMETRY, 1 UNIT.—This requirement is met by the usual theorems and constructions of standard text-books, numerous originals, and applications.

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—The ground is covered by the usual theorems and constructions of standard text-books, originals, and applications.

Science

PHYSICS, 1 UNIT.—This course should consist of class-room work based on a standard text-book, accompanied by lecture-table demonstrations and by numerous practical problems. A parallel course in individual laboratory work is desirable, but is not absolutely required. In the case of laboratory work, one hour of credit will be allowed for each two hours spent in the laboratory.

History. 1 unit

The requirement in history will be met by presenting any one of the following subjects: ancient history, especially Greek and Roman, with the chief events of the early Middle Ages to the death of Charlemagne (814); medieval and modern European history from 814 to the present time; English history; American history and civil government.

GROUP B

From this group units are to be taken, in addition to those of Group A, sufficient to make up the whole number required. Any combination of units, including fractions not less than two-fifths, will be allowed.

Languages

GERMAN, 2 OR 3 UNITS.—The requirement for one unit is indicated under Group A. One unit will also be allowed for second and one each for third and

fourth year work. During the second year the course should be a continuation of the first as regards grammar, composition, and conversation. The reading should consist of at least 200 pages of such texts as Arnold's *Fritz auf Ferien*, Wildenbruch's *Das Edle Blut*, Mosher's *Willkommen in Deutschland* and Benedix' *Der Prozess*. Third-year study should emphasize reading and advanced composition. Suitable texts are Riehl's *Der Fluch der Schönheit*, Freytag's *Bilder aus der deutschen Vergangenheit*, Lessing's *Minna von Barnhelm*, Schiller's *Wilhelm Tell*, and Heine's *Die Harzreise*. The fourth year's work should mark a decided advance in the mastery of vocabulary and idiom as shown both in speaking and writing. The works read may be made the basis for themes. The following reading matter is suggested: Freytag's *Soll und Haben*, Fulda's *Der Talisman*, Hauff's *Lichtenstein*, Scheffel's *Ekkehard*, Schiller's *Wallenstein*, *Maria Stuart*, or *Geschichte des dreissigjährigen Krieges* (Book III), Dahn's *Ein Kampf um Rom*, Goethe's *Dichtung und Wahrheit* (Books I-IV).

FRENCH, 2 OR 3 UNITS.—The requirement for one unit is indicated under Group A. One unit will also be allowed for second and one each for third and fourth year work. Throughout the second year the course should be a continuation of the first as regards grammar, composition, and conversation. At least 250 pages of such texts as Bruno's *Le Tour de la France*, Malot's *Sans Famille*, Mérimée's *Colomba*, Sarcey's *Le Siège de Paris*, and Hugo's *La Chute* should be read. In the third year emphasis should be laid on reading. Some time ought also to be given to advanced composition. Among suitable texts may be mentioned Racine's *Athalie*, Corneille's *Le Cid*, Molière's *Le Bourgeois Gentilhomme*, Sandeau's *Mademoiselle de la Seiglière*, Vigny's *La Canne de Jonc*. From the fourth year's study increased facility in conversation and composition should be gained, and any modern French, other than technical, should be read with ease. Such texts as the following are recommended: the prose works of Dumas père, Hugo's *Ruy Blas*, La Fontaine's *Fables*, Sainte-Beuve's *Essays*, Taine's *Origines de la France Contemporaine*, Pellissier's *Mouvement Littéraire au XIX^e Siècle*. At least 600 pages should be read.

LATIN, 1 TO 4 UNITS.—A credit of one unit will be given for each year's work in Latin, covering in all a standard beginners' book, four books of Cæsar's Gallic War, six orations of Cicero and six books of Virgil's *Æneid*. It is expected that work in prose composition and sight reading will be included in each subject.

Mathematics

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—See Group A for other than engineering students.

Science

BOTANY, 1 UNIT.—The preparation in botany should include individual laboratory work recorded by notes and diagrammatic drawings. Field work is desirable, and should also be accompanied by notes. The notebook and drawings certified by the teacher should be presented at the time of application for entrance credit. The year's course of study should consist of three parts, viz.: 1. The general principles of the anatomy, morphology, physiology, and ecology of seed plants.

2. The natural history of the plant groups. The structure, reproduction, and adaptations to habitat of one or two types from each group should be studied.
3. Classification. A brief study of the subdivisions of the above groups. Ability to determine species of flowering plants is not essential. Any standard text-book covering the above field may be used.

CHEMISTRY, 1 UNIT.—An elementary text-book, such as William's Elements of Chemistry or First Principles of Chemistry, by Brownlee and others, should be covered by recitations. At least one exercise per week must be devoted to individual work in the laboratory. The pupil must perform forty or more experiments, such as are described in the Report of the College Entrance Examination Board, 1909, and keep a notebook in which he describes the apparatus used, records the phenomena observed, and states the conclusions in his own words, in each experiment.

GEOLOGY, $\frac{1}{2}$ UNIT.—In geology, a study of the following subjects should be made: rock-forming minerals, their names and chemical constituents; earthquakes—their cause and effects; volcanoes—distribution, types, character of eruption, nature of erupted material; supposed physical state of the earth's interior; surface agencies destructive to rocks, with brief illustrations; processes of re-construction with illustrations; rocks—classification, according to origin, rock fracture and dislocation, rock structure due to erosion, metamorphic rocks, mineral veins and their method of formation; conditions determining land sculpture; the geological periods, with land elevations, and the characteristics of climate, plant and animal life of each period.

PHYSIOGRAPHY, 1 UNIT.—This course should include a consideration of the earth as a globe, the atmosphere, the waters of the earth, the lands, life upon the earth, and the reactions between these elements. Special attention should be given to the questions of climate, the winds, the weather, tides, ocean currents, and to the effect of the ocean in modifying climatic conditions. Attention should be directed to the manner in which the land was originally formed and to the way in which the original formation has been and is being modified by the action of erosion, the winds, and frost. Throughout the course consideration should be given to the manner in which the various physical characteristics of the earth have affected life upon its surface.

PHYSIOLOGY, $\frac{1}{2}$ UNIT.—The text-book work should cover material equivalent to that of Martin's Human Body or Hough and Sedgwick's Human Mechanism. In addition the applicant should present a notebook, showing laboratory work upon the elementary physiological processes and general structure of mammals.

ZOOLOGY, 1 UNIT.—The work should include: 1. The general natural history of a number of common vertebrates and invertebrates common to the locality where the work is given. 2. The classification of these forms into phylum, class and order, with the characteristics of the several groups. 3. The main anatomical features of one vertebrate, two arthropods (one an insect); an annelid, preferably the earthworm, a coelenterate, two protozoans (*Amoeba* and *Paramoecium* recommended). 4. The general physiology of the above types involving digestion, absorption, circulation, excretion, and nerve function. These should be compared with the same functions in the human body. 5. The following subjects should be brought before the student in connection with the foregoing studies:

asexual and sexual reproduction, alternation of generations, regeneration, fertilization and segmentation of egg cells, adaptation, variations, evidences of relationship between similar groups, and the cell structure of animals.

Certified notebooks must be presented, which include notes upon work and discussion in classroom and drawings of the forms dissected.

History, 1 unit

See Group A.

Drawing, 1 unit

This may be either freehand or mechanical. If freehand drawing is offered, the candidate should submit at least fifteen drawings, the majority to be in pencil, certified as his work by the instructor. These should show ability to sketch from various objects with considerable accuracy of proportion and clearness of line, and a fair understanding of the rules of perspective and light and shade as applied in freehand sketching. A candidate may also present the equivalent of five hours per week for one year in elementary mechanical drawing, lettering, or sketching from models.

Domestic Science, 1-2 unit

In domestic science the student must present satisfactory evidence of knowledge in the following subjects: the use and care of the kitchen equipment, general cleaning processes, the marketable forms of staple foods. She must also show credit for at least twelve cooking laboratory lessons of two hours each.

Shop Practice, 1-2 unit

The candidate may offer carpentry or any of the various forms of benchwork given in a well-equipped manual training school, equivalent to five hours per week for one-half year.

Farm Practice, 1-2 unit

By "farm practice" is meant familiarity with the operations of the farm, such as the harnessing of teams, the use of tillage implements, and the care of dairy animals.

Degrees

The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 17-25. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satisfactory thesis in

applied or economic science, and upon passing examinations in the subjects pursued. Candidates not graduates of this college must file with the committee on graduate study, not later than October first, a detailed statement of their previous work, certified by the proper authorities. They must select, not later than November fifteenth, a major and a minor subject which must be closely related and have the approval of the committee on graduate study and of the professor in whose department the principal work is done. Major subjects may be selected in any of the following departments: agriculture; botany; chemistry; zoölogy; bacteriology; home economics; electrical, mechanical and civil engineering. The minor may be selected from undergraduate subjects outlined in the catalogue; the major, however, must be advanced work specially arranged with the individual professor. The thesis must be typewritten, upon paper of the size and quality prescribed, and two copies must be in the hands of the president not later than June first.

The requirement for the degree of Mechanical Engineer, Electrical Engineer, or Civil Engineer, consists of three years of successful professional practice subsequent to the Bachelor's degree, one of which must have been in a responsible position; the presentation of an acceptable thesis; and the passing of examinations upon the investigations involved in the thesis.

A registration fee of five dollars is charged for an advanced degree. Students from outside the state pay a tuition fee of thirty dollars during the year of residence. The cost of a diploma is five dollars.

Teachers' Certificates

The following resolution adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island College will be received as evidence of the required qualifications in scholastic subjects for a teacher's certificate of the first grade."

By action of the Regents of the State of New York, taken June 9, 1910, the degrees of B. S. and M. S. from this college are accepted as a basis for the issuance of licenses to teach in that state.

Expenses.

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is \$15.00 a term, or \$30.00 a year. Students who apply for admission as non-residents will be expected to pay tuition, throughout their course unless there is a bona-fide change of residence of the parent or guardian.

The regular college expenses are tabulated as follows:

Board, \$3.75 per week.....	\$135 00
Room-rent, including heat and light.....	30 00
Incidental fee, \$4.50 per term.....	9 00
Student tax for Beacon, outside lectures, athletics, etc.....	10 00
Laboratory expense, \$5 per term, estimated.....	10 00
Uniform for military drill, estimated.....	16 00
	\$210 00

The first four items must be paid quarterly in advance; that is to say, \$46.00 will be required at the opening of the year, September 14, 1915, and also at each of the following dates: November 29, 1915; February 8, 1916; and April 11, 1916. Non-residents of the State should add to this sum \$7.50 for tuition each quarter. In order to secure dormitory accommodations, the student is required to deposit one dollar with the application, the dollar to be credited on the fall-term room-rent. If the student fails to take the room, the dollar is forfeited. The uniform also must be paid for at the opening of the college year, in advance. The item of laboratory expense includes all material used in the various laboratories, and the destruction, breakage, or marring of apparatus and tools, and must be paid when bill is presented at the close of each term.

The probable cost of books will be from \$15.00 to \$30.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from \$10.00 to \$25.00. A fee of 50 cents will be charged for each second examination to make up a condition. Graduates pay the cost of diplomas, \$5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter.

UNIFORM.—Every able-bodied male college student is required to drill and to wear a uniform. The uniform must be paid for immediately on entering the college, when the students are measured for the suits.

When worn only on drill and properly cared for, one uniform may last two or more years. The student may, however, wear his uniform all the time.

TRANSPORTATION.—The college conveys day-students to and from the railroad station free of charge. Once at the beginning and end of each term, trunks will be conveyed to and from the station for students living in dormitories under college control.

BOARDING STUDENTS.—The price of board for 1915-16 will be \$3.75 per week. Students who *leave regularly every week* on Friday afternoon and return Monday morning will receive a rebate for time of absence. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the holder of such ticket. After this ticket is issued, all charges for board will be made in accordance therewith, unless the student has the ticket changed by the bursar. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance.

DORMITORIES FOR MEN.—East Hall affords excellent accommodations for men students. The two upper floors are entirely devoted to rooms for students. The sanitary conveniences on each floor are excellent and ample, including a full complement of shower baths. The first floor contains a handsome social room for the men, two dining-rooms and kitchen fitted with all modern equipment. South Hall and Watson House are devoted to the use of the fraternities and afford very desirable rooms for dormitory purposes. Two houses in the village of Kingston are also hired by the college for fraternity dormitories. The Beta Phi fraternity has erected its own dormitory with capacity for twenty-five students.

DORMITORY FOR WOMEN.—During the summer of 1909 the interior of Davis Hall was entirely reconstructed. On the first floor are the administration offices and the office of the extension department. The upper floors of the building are utilized for the women's department. The accommodations for women students in this building are under careful supervision, and compare favorably with those at any women's college in the country. There is a neat hospital, with all necessary adjuncts. The oversight of the young women is efficient, kindly, and painstaking. Attention is especially invited to the facilities and arrangements for the welfare of young women.

FURNITURE.—The rooms in the women's dormitory are provided with necessary furniture, including mattresses, but no other bedding material. *All students in the men's dormitory are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from \$8.00 to \$10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold when the student leaves, for one-half to three-fourths the original price. All students should bring with them such articles as sheets, blankets, pillow, pillow-slips (all for single bed), and towels. Men students are required to purchase mattresses at the college.

ROOMS IN THE VILLAGE.—Arrangements have been made for rooms in the village of Kingston, some of these being under college management and others in private houses. In the case of the former, room rent will vary from 60 cents to \$1.00 per week, with heat and light furnished, the student to provide other furnishings. Furnished rooms in private houses for students who occupy them throughout the college year range from \$1.25 to \$2.00 per week.

COLLEGE STORE.—Students will be required to pay cash at the store for all books and other supplies.

DAMAGE FUND.—All damage not due to ordinary wear will be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.
2. Students found guilty of such damage, but not acknowledging and settling for the damage will be charged double the cost of repair.
3. Students will be responsible for damage in their own rooms. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Religious Influences

This college is a state institution, and consequently, the widest latitude is given to all creeds and forms of religious belief. Simple assembly exercises are held on one day of each week and are conducted by the president or some other member of the faculty. It is required that students attend assembly.

A branch of the Intercollegiate Young Men's Christian Association is doing active work among the men students, holding a meeting weekly throughout the year. This association conducts courses in bible study, and is taking the lead in endeavoring to establish sound and high ideas of college life.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and if possible, to join its membership. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

The College Lecture Association

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to introduce talented speakers upon subjects both entertaining and instructive. The association may be looked upon as a permanent and important factor in college activities.

Equipment

FARM AND CAMPUS.—The landed property of the college has a total area of 170 acres. About forty-one acres of this area are devoted to buildings, lawns, and athletic grounds; nine acres are in forest; and six are being developed as an arboretum. Thirty-five acres are used for the field investigations of the experiment station, which are valuable object lessons in agricultural instruction. The remainder is used for garden and orchard, and for raising crops for the live stock. The total value of land, buildings, and equipment is nearly \$400,000.

AGRICULTURAL BUILDINGS.—The agricultural buildings consist of a commodious dairy barn with laboratories for instruction in farm dairying and milk testing; a horse barn of modern construction; a greenhouse with an area of 10,000 square feet; a building attached to the greenhouse for class work in agronomy and horticulture, and a group of buildings used for instruction and experimentation in poultry raising.

ENGINEERING BUILDINGS.—The engineering department is equipped with modern machine, forge, and pattern-making shops,

located in a building known as Ladd Laboratory. In Lippitt Hall, a granite building, 134 by 40 feet, are housed the lecture rooms, drawing rooms, testing rooms, and engineering laboratories of the department. A boiler house and a dynamo room, from which heat, power, and light are furnished for the various buildings, are a part of the engineering outfit for practical instruction and for experimentation in electrical and steam engineering.

SCIENCE HALL.—This building was first occupied in October, 1913. It consists of three stories and a basement, measures 154 by 60 feet, and is built of native granite. Here are housed the departments of chemistry, physics, zoölogy, bacteriology, and botany. Each department is provided with commodious laboratories, recitation room, and department library room. An amphitheatre having a seating capacity of 150 and provided with suitable projection apparatus, serves for the common use of the various departments requiring such a room.

HOME ECONOMICS LABORATORIES.—The special laboratories of this department are located in South Hall and in a small building near it.

TAFT LABORATORY.—The laboratories and offices of the experiment station are housed in a granite building known as Taft Laboratory.

DORMITORIES.—East Hall is a stone building for men students. On the first floor are a social room, and a college commons with a seating capacity of 300. Davis Hall is also a stone building, the upper stories of which are used as a dormitory for women students, while the offices of administration are located on the first floor. South Hall and Watson House are small dormitories. The college also controls two small dormitories in the village of Kingston.

DRILL HALL AND ATHLETIC HOUSE.—The drill hall, a room 143 by 40 feet, located in Lippitt Hall, is used both as an armory and as a gymnasium. A dressing room and bath room are attached to the hall. An athletic house provided with bath and dressing rooms for out-of-door sports is located at the athletic field, which is equipped with cinder track and straightaway for track athletics. Tennis courts for both men and women are also provided.

The Library

The library occupies two large adjoining rooms in Lippitt Hall, and numbers over seventeen thousand volumes. The books are

arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a dictionary catalogue gives author, title, and subject entries. As the library has been from the first intended for reference work, the various departments of instruction have made their selections with the greatest care. In the reading-room, one hundred and twenty of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

Since the library has been a government depository twenty-five hundred books and pamphlets have been received, which are of value in scientific investigation and research.

The library is open every week day from 8:00 A. M. to 6:00 P. M., with the exception of an hour at noon. The librarian or her representative is in constant attendance, to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the State are at liberty to use the library.

Location

The college campus is one and one-half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. The ride from Providence is about forty to forty-five minutes in length. From New York the time is some four hours.

Pictures of the college buildings are published in Supplement to Volume XI, No. 1, which may be had by addressing the President of the college.

Departments of Instruction

The following subjects are offered in the different departments. All subjects in the departments of instruction preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture

PROFESSOR ADAMS, PROFESSOR COOLEY, PROFESSOR COBB, ASSISTANT PROFESSOR BURDICK, MR. GODIN, MR. LAMBERT.

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work outlined above, all students registered for a degree in agriculture will be required to show certain familiarity with the ordinary operations of the farm, before such degree is given.

In order that those students who have not had an opportunity to receive training in the practical work of the farm may become familiar with some of the more common operations, they will be required, during their connection with the college, to do a certain amount of routine farm work without pay. This will include work in the dairy barn, poultry yard, greenhouses and gardens. This training will be in addition to the laboratory credits prescribed in the regular course. The amount of such work required will depend upon the efficiency shown by the student. No college credits will be given for this work, yet the neglect of this phase of the training may be considered a sufficient cause for dismissal from the institution. Students taking practical work upon farms during the summer vacations will be

required to furnish a certificate from their employers, stating the time spent on the farm and the kind and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is to elect during the Senior year.

AGRONOMY

PROFESSOR ADAMS, ASSISTANT PROFESSOR BURDICK.

The instruction in agronomy may begin the first term of the Sophomore year, when a study is made of the forage plants. Following this work are subjects dealing with the other field crops and their uses as food for man and beast. In the work with soils and fertilizers, especial emphasis is placed upon the problems connected with the proper use of chemical manures.

The business side of farm life is given attention in the subjects treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment station, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery. A well-equipped blacksmith shop is also provided.

Students have the advantage of the field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects

II. Forage Crops.—History and development of the plants used for forage; silage, methods of construction of silos. *Two recitation credits per week, first term. Elective for Sophomores in Agriculture.*

III. Soils and Fertilizers.—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Four recitation and one and one-half*

laboratory credits per week, first term. Required of Juniors in Agriculture. Option for Juniors in Applied Science. Prerequisite: Chemistry I and II.

IV. Farm crops.—Origin and history; production and place in the rotation of clovers, grasses, and root crops. *Three recitation credits and one laboratory credit per week, second term. Required of Juniors in Agriculture. Option for Juniors in Applied Science. Prerequisite: Botany I and II.*

VI. Farm Machinery.—Development of farm machinery, methods of construction, function, and operation. *Two recitation credits and one laboratory credit per week, second term. Option for Juniors in Agriculture. Mr. Burdick.*

VII. Farm Management.—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming accounts. *Two recitation credits per week, second term. Required of Juniors in Agriculture. Prerequisite: Agronomy III and IV.*

VIII. Farm Management. (Advanced.)—Individual problems of farm management are assigned. Field trips are made for studying different types of farming. Problems in planning cropping systems and other management work. There will be at least two one-day field trips. *One recitation and two laboratory credits per week, second term. Elective for Seniors in Agriculture.*

IX. Literature.—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports upon special topics. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.*

X. Agricultural Experimentation.—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits per week, first term. Required of Seniors in Agriculture.*

XI. Plant Breeding.—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Three recitation credits per week, first term. Required of Seniors in Agriculture. Option for Seniors in Applied Science. Prerequisite: Botany I and II.*

XII. Farm Accounting.—Aims and objects of farm accounts, farm inventories, single enterprise accounts, complete set of farm accounts and special records. Emphasis will be placed upon the interpretation of results as applied to the organization of a farm. *One recitation and one laboratory credit per week, first term. Elective for Seniors in Agriculture.*

A. Soils and Fertilizers.—An elementary course upon the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Three recitation credits and one laboratory credit per week. Required of Short-Course students in Agriculture, first year.*

B. Crops and Rotations.—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various types of farms. *Three recitation credits and one and one-half laboratory credits per week, first term. Required of Short-Course students in Agriculture, second year.*

C. Farm Management.—An elementary course upon the principles of farm management, equipment, cost of production. *Three recitation and one laboratory*

credit per week, second term. Required of Short-Course students in Agriculture, second year.

D. Farm Machinery.—Care and repair of farm implements. *One recitation and three laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year.* Assistant Professor Burdick.

ANIMAL HUSBANDRY

PROFESSOR COOLEY, ASSISTANT PROFESSOR BURDICK, MR. LAMBERT,
MR. RODMAN.

The subjects in animal husbandry are so arranged as to furnish practical as well as theoretical instruction in the selection, care and management of live stock on the farm. All students who graduate in agriculture are required to study breeds of stock, stock-judging, and veterinary practice. The student is taught how to select and care for farm animals. Students specializing in animal husbandry are offered advanced stock-judging, the principles of feeding, breeding, and the management of herds, flocks, and studs. Work in dairying is offered during the second term of the Junior year, and one who cares to specialize will find an elective throughout the Senior year.

Instruction in poultry culture is given during the Junior year, and is both practical and theoretical. During the same year an elective is offered in advanced poultry judging. The equipment in poultry is particularly strong. The college poultry plant enables the student to obtain a large amount of practical experience in incubation, brooding, feeding, and general management. In addition to the poultry stock in the college yards, students have the opportunity of following the investigations which are being conducted by the experiment station. An eight weeks' course in poultry keeping is offered also during the winter months, full information concerning which may be obtained by addressing the President of the college.

Subjects

I. Stock Judging.—Scoring and comparison of various types of horses, cattle, sheep and swine. Study of the special purpose or special type animal. *Two laboratory credits per week, second term. Required of Freshmen in Agriculture.* Professor Cooley.

II. Advanced Stock Judging.—A continuation of the work given in Animal Husbandry I in the judging of the various classes of farm animals. Tracing of pedigrees. Students chosen to represent the college in the annual stock judging

contest will be credited with this subject. *Two laboratory credits per week, second term. Elective for Juniors or Seniors in Agriculture.* Professor Cooley.

III. Breeds.—History and characteristics of the principal breeds of farm animals. A study of conditions to which each is adapted. *Two recitation credits per week, second term. Required of Freshmen in Agriculture.* Professor Cooley.

IV. Principles of Breeding.—A study of the science and art of breeding. Discussion of the laws of heredity as applied to improvement of animal types. *Three recitation credits per week, second term. Required of Seniors in Animal Husbandry. Option for Seniors in Applied Science. Elective for others. Prerequisite: Zoölogy III.* Professor Cooley.

V. Management of Dairy Cattle.—This course covers the field of milk production. It includes the building up of the dairy herd; the proper care of dairy cattle under different conditions; the dairy barn; special problems of feeding for milk production; advertising; fitting for sale and show ring. *Two recitation credits per week, first term. Elective for Seniors in Agriculture.* Professor Cooley.

VI. Feeds and Feeding.—Composition of feeds, principles of animal nutrition. Various methods of feeding farm animals. Balanced rations. Feeding standards. *Three recitation credits per week, second term. Required of Seniors in Animal Husbandry. Elective for Seniors in Horticulture and Applied Science. Prerequisite: Chemistry XIV.* Professor Cooley.

VII. Dairy Practice.—Lectures and laboratory practice in Babcock test and in handling milk and making butter on the farm. Herd testing methods. *One recitation and two laboratory credits per week, second term. Required of Juniors in Animal Husbandry. Elective for others.* Assistant Professor Burdick.

VIII. Dairy Practice.—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and two laboratory credits per week, throughout the year. Elective for Seniors in Agriculture.* Assistant Professor Burdick.

IX. Research and Literature.—*Hours to be arranged, first term. Elective for Seniors in Agriculture.* Professor Cooley.

X. Veterinary Practice.—Veterinary anatomy, materia medica, obstetrics, pathology. Combating disease from the farmer's standpoint. Injuries. *Three recitation credits per week, first term. Required of Juniors in Agriculture. Prerequisite: Zoölogy III.* Professor Cooley.

XI. Farm Buildings.—Plans, location, and estimate on the various farm buildings. *Two laboratory credits per week, second term. Elective for Seniors in Agriculture.* Mr. Rodman.

XII. Poultry Craft.—A study of all branches of poultry keeping. Laboratory work consists of pen practice, incubation, brooding, killing and dressing. *One laboratory credit per week, second term. Elective for Juniors in Agriculture.* Mr. Lambert.

XIII. Judging Poultry.—Practice in judging standard poultry both by comparison and score card methods. *Two laboratory credits per week, second term. Elective for Juniors in Agriculture.* Mr. Lambert.

XIV. Poultry Husbandry.—Study of poultry investigations and experimental work in various lines of poultry keeping. *At least two laboratory credits per week, throughout the year. Elective for Seniors in Agriculture and Applied Science, first term.* Mr. Lambert.

XV. Management of Beef Cattle and Horses.—During the first nine weeks the course will cover practical methods of beef production. Studies will be made of successful practices in feeding for the market as well as advertising, fitting for sale and show ring, and the general care and management of beef cattle. During the last nine weeks, similar studies will be made in horse production, including market classes of horses, their production and utility, and successful methods of handling and training horses. *Two recitation credits per week, first term. Elective for Seniors in Agriculture.* Professor Cooley.

XVI. Management of Sheep and Swine.—During the first nine weeks the best systems of sheep husbandry will be studied. This will include rearing for mutton and wool; production of spring lambs; fattening sheep and lambs for market; general care and management of the breeding flock; advertising, fitting for sale and the show ring. During the last nine weeks similar studies will be made in pork production, including a study of foodstuffs with reference to their adaptability to pork production. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.* Professor Cooley.

A. Breeds.—Breeds of horses, cattle, sheep, and swine. Emphasis is placed on the type best fitted to the agriculture of New England. *Two recitation credits per week, throughout the year. Required of Short-Course students in Agriculture, first year.* Professor Cooley.

B. Stock Judging.—Judging of the various classes of animals and their adaptability to different purposes, as cattle for milk or beef production, horses for driving or draft. *Two laboratory credits per week, throughout the year. Required of Short-Course students in Agriculture, first year.* Professor Cooley.

C. Dairy Practice.—Babcock test for dairy products, production of sanitary milk, and butter making. *One recitation and three laboratory credits per week, first term. Required of Short-Course students in Agriculture, second year.* Assistant Professor Burdick.

D. Principles of Feeding.—Compounding rations. *Three recitation credits per week, first term. Required of Short-Course students in Agriculture, second year.* Professor Cooley.

E. Principles of Breeding.—A study of the selection of animals, heredity, and variation. *Two recitation credits and one laboratory credit per week, second term. Required of Short-Course students in Agriculture, second year.* Professor Cooley.

G. Care of Animals.—Housing, care, and management of farm animals. Practical directions for handling of stock on the farm. *Two recitation credits per week, first term. Required of Short-Course students in Agriculture, second year.* Professor Cooley.

H. Poultry Keeping.—Study, demonstrations, and work in all of the practical branches of the poultry department. *One recitation and two laboratory credits per week, throughout the year. Required of Short-Course students in Agriculture, first year.* Mr. Lambert.

1. Farm Buildings.—A practical course in the planning of farm structures, estimating quantities of material required, and costs. *One and one-half laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year. Mr. Rodman.*

Bacteriology

PROFESSOR HADLEY

The instruction in bacteriology is arranged to meet the requirements of two classes of students: (1) For those who desire a general knowledge of the bacteria and their relation to problems of human life, including agriculture, engineering, production of disease, and the problems of public health and hygiene. In Bacteriology I an attempt is made to give equal emphasis to each of these phases of the subject, taught by means of laboratory work supplemented by lectures. (2) The instruction in bacteriology also offers subjects of study especially designed for those who intend to specialize in some phase of bacteriological work after graduation. For such students Bacteriology II and III are offered. These courses are not essential, and are not recommended for students who do not intend to so specialize. In Bacteriology II opportunity is offered to acquire advanced bacteriological technique. The subject is confined exclusively to laboratory work. In the second term of advanced bacteriology (Bacteriology III) the student is permitted to pursue individual work on selected problems, and opportunity is offered to acquire familiarity with some of the methods of bacteriological research. This work is outlined with reference to the particular field of bacteriology which the student plans to enter, as for instance, soil, dairy, pathogenic or systematic bacteriology.

This subject involves laboratory work, required reading, and discussion of bacteriological theories and problems, and requires a minimum of nine hours attendance.

Subjects

1. General Bacteriology.—A subject designed to give the student a general knowledge of the bacteria. The first term's work involves a study of laboratory methods and technique, the isolation and determination of unknown species, etc. The work of the second term is designed to acquaint the student with the varied

application of bacteriology to practical problems. It includes a study of the bacteriology of the air, water, soil, milk and other foods; the relation of bacteria to dairying, agronomy, hygiene and to the prevention, diagnosis and treatment of communicable diseases. Laboratory work supplemented by lectures. *Two laboratory credits and one recitation credit per week, throughout the year. Prerequisite: Botany I or Zoölogy I. Required of Seniors in Agriculture and Home Economics. Elective for other courses.*

II. Advanced Bacteriological Technique.—A study of special methods employed in the investigation of bacteriological problems. The work includes the preparation of culture media, the bacteriological examination of air, shellfish and meats; a study of enzyme production by bacteria; of acid production; the relation of bacterial growth to oxygen supply; determination of thermal death point, of optimum reaction of medium, of resistance to drying, to light and to disinfectants; testing the germicidal power of unknown disinfectants; filtration; pathogenesis and virulence; experimental inoculation; post-mortem examinations, active immunization, passive immunization and the examination of the blood by histological, bacteriological and serological methods. *Three laboratory credits per week, first term. Elective for Seniors who have passed with credit in Bacteriology I.*

III. Bacteriological Theories and Problems.—Laboratory studies, assigned reading and discussions, planned to meet the needs of individual students who are specializing in bacteriological work. *One recitation credit and four laboratory credits per week, second term. Elective for Seniors who have passed with credit in Bacteriology II.*

Botany

PROFESSOR MERROW, MR. SPENCER.

The aim of the department is to give a general knowledge of plant life, followed by subjects of an economic nature. The college is well located for carrying on this line of work. The native flora is extensive, and an abundance of material is furnished by the cultivated plants of the gardens and fields of the college farm. The green houses supply fresh material for winter use, and the herbarium of 5,700 specimens is a useful reference collection. The laboratory is equipped with dissecting and compound microscopes, a microtome, paraffin bath, and simple physiological apparatus. Charts and models are provided for lecture demonstrations. A good working library, including several botanical periodicals, is an important factor in the outfit for instruction.

Subjects

I. General Botany.—A study of common plants, their structure, physiology, evolution, and adaptation to environment. *Two laboratory credits and one recita-*

tion credit per week, throughout the year. Required of Freshmen in Agriculture, Applied Science, and Home Economics.

II. Botany of crops and weeds.—*Two laboratory credits and one recitation credit per week, first term. Required of Sophomores in Agriculture and Applied Science.*

III. Trees and shrubs.—The determination of native and introduced trees and shrubs in summer and winter condition. *One laboratory or field credit per week, throughout the year. Option for Seniors in Applied Science.*

IV. Forestry.—The management of New England wood lots. *Two credits per week, second term. Given in alternate years, 1914, 1916. Option for Juniors or Seniors in Agriculture and Applied Science.*

V. Histology.—Seed plants are studied by the usual histological methods of imbedding, sectioning, and staining. *Four laboratory credits and one recitation credit per week, first term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.*

VI. Pathology.—Diseases caused by parasitic fungi and the remedies for them. *Four laboratory credits and one recitation credit per week, second term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.*

VII. Assigned Work.—*Three credits throughout the year. Elective for Seniors in Applied Science and Agriculture.*

A. Plant Life.—Elementary agricultural botany. *Two and a half laboratory credits and one recitation credit per week, throughout the year. Required of Short-Course students in Agriculture, first year.*

Chemistry

PROFESSOR LEIGHTON, ASSISTANT PROFESSOR SMITH, PROFESSOR HARTWELL, MR. PERRY.

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. The work is designed to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including the principal technical processes, and a brief account of the carbon compounds. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Two periods per week for the first half-year and three for the second half-year are devoted to the lectures and recitations, and three hours per week for a half-year to the practical work in the laboratory, where the student has an opportunity to verify some of the chemical theories and to become familiar with substances and their chemical behavior. During the second half of this year the laboratory period is devoted to qualitative analysis, which continues

through the first half of the Sophomore year. The subject is taught in part by means of recitations and lectures, but mainly by work in the laboratory. Students are required to complete a systematic course in basic and acid analysis, and to analyze correctly a number of alloys, salts, and minerals.

Quantitative analysis is taught mainly by laboratory practice, but sufficient time is devoted to lectures and recitations to teach thoroughly the fundamental principles involved. The work comprises gravimetric and volumetric analysis, and the quantitative determination of salts, alloys, ores, minerals, and commercial and food products. Determinative mineralogy, which includes blow-pipe analysis and crystallography, is taught by recitations and laboratory work. The student learns the physical properties of the common minerals, and their identification. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such theoretical and practical knowledge as to prepare him for analytical work of any kind.

The study of organic chemistry begins with a short course, designed to cover the general principles and methods, and to include a description of the more important compounds. The subject is continued by those who wish to specialize in chemistry in a more extended course covering the aromatic series and the chemistry of the dyestuffs, and accompanied by laboratory work in organic preparations and analysis. The theoretical and basic principles of chemistry, with their general application, are thoroughly studied by recitation, lectures, and laboratory work in the course in physical chemistry.

The descriptive side of industrial chemistry, which comprises a general survey of the technical applications of chemical principles to the arts and industries, is studied by recitation work; while practical technical operations, such as textile coloring, suited to the needs of the individual student, are studied by laboratory practice.

Agricultural chemistry, required of agricultural students in the Sophomore year, embodies the chemistry of soils and fertilizers, also the chemistry involved in the changes which take place during the growth of animals and plants, as well as in the storage or manufacture of the ordinary farm products.

Subject XXI is intended to familiarize the student with the general field of chemical literature, and to inculcate the habit of keeping up with the recent advance in chemical science by reports and dis-

cussion of articles appearing in the chemical journals. This course is preparatory for Subject XX, which involves original investigation.

The laboratory occupies the first floor and a part of the basement of the new Science Hall, seventeen rooms altogether, including a large general laboratory, organic and analytical laboratories, weighing room, library, large lecture room, recitation room, two offices, store rooms and supply room. It is well equipped with apparatus and consulting library for teaching the subjects mentioned below.

Subjects

I. General Chemistry.—*Two recitation and one and one-half laboratory credits per week, first term. Required of Freshmen in all courses. Assistant Professor Smith, Mr. Perry.*

II. General Chemistry and Qualitative Analysis.—*Three recitation and one and one-half laboratory credits per week, second term. Required of Freshmen in all courses. Professor Leighton, Assistant Professor Smith, Mr. Perry.*

III. Qualitative Analysis.—Basic and acid analysis; analysis of salts, industrial and natural products. *Three laboratory credits per week, first term. Required of Sophomores in Electrical and Civil Engineering. Professor Leighton, Mr. Perry.*

III a. Qualitative Analysis.—Basic and acid analysis; analysis of salts, industrial and natural products. *Three laboratory and one recitation credits per week, second term. Required of Sophomores in Chemical Engineering, Home Economics and Applied Science. Professor Leighton, Mr. Perry.*

IV. Organic Chemistry.—*Three recitation credits and one laboratory credit per week, first term. Required of Sophomores in Chemical Engineering, Home Economics, Agriculture, and Applied Science. Elective for others who have completed Chemistry III. Assistant Professor Smith.*

V. Organic Chemistry (advanced).—To be given alternate years. Given next in 1916. *Four recitation credits and one laboratory credit per week, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Leighton.*

VI. Organic Chemical Laboratory.—*Three laboratory credits per week, second term. Required of Seniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Assistant Professor Smith.*

VII. Quantitative Analysis.—Gravimetric and volumetric analysis. Analysis of minerals, ores, alloys, and industrial products. *Three laboratory credits per week, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Assistant Professor Smith.*

VIII. Quantitative Analysis.—*Four and one-half laboratory credits per week, second term, Junior year, and three laboratory credits per week, first term, Senior year. Required of students in Chemical Engineering, both terms. Required of students who take the Chemical Option in Applied Science, second term, Junior year. Elective for those who have completed Chemistry III. Assistant Professor Smith.*

X. Quantitative Analysis.—Food Analysis.—To be given alternate years; given next in 1916. *Four laboratory credits, second term. Required of Seniors and Juniors in Home Economics. Elective for others who have completed Chemistry IV. Assistant Professor Smith.*

XI. Determinative Mineralogy.—*One and one-half laboratory credits per week, second term. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Mr. Perry.*

XII. Physical Chemistry.—To be given alternate years. Given next in 1917. *Four recitation credits and one laboratory credit per week, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Professor Leighton.*

XIV. Agricultural Chemistry.—*Three recitation credits and one laboratory credit per week, second term. Required of Sophomores in Agriculture. Prerequisite: Chemistry I-IV. Professor Hartwell.*

XV. Gas Analysis.—See Mechanical Engineering XV.

XVI. Industrial Chemistry.—*Four recitation credits per week, first term. Required of Juniors in Chemical Engineering and of Juniors who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Leighton.*

XVII. Industrial Chemistry.—The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis and textile coloring. *Three laboratory credits per week, first term. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical Option in Applied Science. Professor Leighton.*

XIX. Physiological Chemistry.—To be given alternate years. Given next in 1917. *Four credits per week, second term. Required of Seniors and Juniors in Home Economics. Assistant Professor Smith.*

XX. Assigned Work.—*Three credits per week, throughout the year. Required of Seniors in Chemical Engineering and Seniors who take the Chemical Option in Applied Science. Professor Leighton.*

XXI. Reports and Discussion of Chemical Subjects and Recent Investigations.—*One credit per week, throughout the year; required of Juniors and Seniors in Chemical Engineering; and of Juniors and Seniors taking the Chemical Option in Applied Science. Professor Leighton.*

A. Chemistry of Plant and Animal Life.—*Three recitation credits and one and one-half laboratory credits per week, throughout the year. Required of Short-Course students in Agriculture, first year. Assistant Professor Smith.*

Drawing,—Freehand

MISS ELDRED

The aim of the subjects described below is to supply the practice in drawing necessary for subsequent work in the science laboratories, to give an elementary knowledge of the history of art, and to develop some appreciation of the beautiful in art and nature. For the first term, the work comprises outline drawing in pencil mainly from plant and animal forms. The work of the second term includes some consideration of perspective and of the principles of design. In the first term of the Sophomore year the home economics students consider the subject of color,—the principles of color harmony, and the use of color in design and decoration. The object of this work is to develop appreciation of color and to enable the student to exercise a more intelligent and sensitive discrimination in its use. In the Junior year, special work is arranged for the first term to accompany and illustrate the home economics course, treating of the arrangement and decoration of the house. The brief course in the history of art aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. The department has a considerable equipment of illustrative material for this work, including a collection of about one hundred and fifty casts and over three hundred photographs of folio or larger size, with many smaller prints, among them two thousand University Prints, illustrating Greek and Roman sculpture, and the art of Italy, Germany, and the Netherlands.

Subjects

II. Pencil Drawing from Objects.—*One laboratory credit per week, first term. Required of Freshmen in Agriculture. One laboratory credit per week, throughout the year. Required of Freshmen in Applied Science and Home Economics. Five laboratory credits per week, first term. Elective for Freshmen.*

III. History of Art.—*Two recitation credits per week, second term. Required of Juniors in Home Economics. Two recitation credits per week, first term. Required of Seniors in Home Economics.*

IV. Color Problems.—*One laboratory credit per week, first term. Required of Sophomores in Home Economics.*

V. Drawing in Charcoal from Still Life and the Cast.—*Two laboratory credits per week, second term. Elective.*

VI. Pen-and-ink Drawing, Water-Color, or Pastel.—*Two laboratory credits per week, second term. Elective.*

VII. Modeling.—*Two laboratory credits per week, second term. Elective.*

VIII. Work Illustrating Home Economics VII.—*One laboratory credit per week second term. Required of Juniors in Home Economics.*

IX. History of American Art.—*One recitation credit per week, second term. Elective.*

X. Modern European Art.—*One or two recitation credits per week, second term. Elective.*

Economic and Social Science

PRESIDENT EDWARDS

Subjects

I. Political Economy.—Text-book, supplemented by lectures, reading, and essays. *Four recitation credits per week, first term, first twelve weeks. Required of Seniors in all courses.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.*

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmers, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations; federation of rural social forces. *Elective.*

Engineering,—Civil

PROFESSOR WEBSTER, MR. MERRILL

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various fields of civil engineering. With this object in view, application of the theories and principles learned in the classroom is made in the field, laboratory, and drafting room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the student's opportunities, the name of the department has been changed from Highway Engineering

to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance of highway engineering in this state and throughout the country in general, considerable emphasis is still placed on this phase of engineering work. The State appropriates annually a sum of money, which is expended under the direction of the instructor and students of the department, in the construction and maintenance of roads on the college property. In this way practical experience is obtained in highway engineering.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and testing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects.

Subjects

I. Surveying.—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level, and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits per week, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering, and in Agriculture.*

II. Topographic Surveying.—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits per week, second term. Required of Sophomores in Civil Engineering.*

III a. Railroad Engineering.—The work consists of a reconnaissance, a preliminary and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates are made. A study is also made of the properties of curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Five credits per week, divided between field and recitation as seems advisable, first term. Required of Juniors in Civil Engineering.*

III b. Railroad Engineering.—The principles of economic railroad construction and maintenance; railway appliances, ballast, and roadbed, culverts and trestles, turnouts, sidings, yards, terminals, signaling, locomotive and grade problems, betterment surveys, etc. *Three recitation credits per week, second term. Required of Juniors in Civil Engineering.*

IV. Graphic Statics.—Instruction is given in graphic statics and its application in the design of simple framed structures. *Two recitation credits per week, first term. Required of Juniors in Civil Engineering.*

V. Roads and Pavements.—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction and maintenance of earth, gravel, and macadam roads, together with a discussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the construction of a gravel or macadam road on the college grounds. *Three recitation credits and one field credit per week, second term. Required of Juniors in Civil Engineering.*

VI. Bridge Details.—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *Two laboratory credits per week, first term. Required of Seniors in Civil Engineering.*

VII. Bridge Analysis.—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*

VIII. Bridge Design.—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits per week, second term. Required of Seniors in Civil Engineering.*

IX. Masonry Construction.—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and a systematic and thorough laboratory course on cement testing is given. *Two recitation credits and one laboratory credit per week, first term. Required of Seniors in Civil Engineering.*

X. Reinforced Concrete—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XI. Sewerage.—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers; removal of house sewage; the design and construction of sewers and method of sewage disposal. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of waterworks, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XIII. Tunneling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit per week, second term. Required of Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XV. Assigned Work.—With the advice and consent of the head of the department, the student elects three hours' work in the Senior year. This may be research, thesis, or recitation and laboratory work, depending upon the qualifications of the student. *Three credits per week, throughout the year. Required of Seniors in Civil Engineering.*

XVI. Vacation Reading.—Systematic reading during vacations on some topic assigned by the head of this department.

XVII. Metal Structures.—The graphical determination of stresses in steel mill buildings. *One laboratory credit per week, second term. Elective for Seniors in Civil Engineering.*

XVIII. Irrigation Engineering.—This includes a study of the impounding, diverting, flow, and measurement of water, quantity required, canals, canal works, storage reservoirs, waterways, etc. *Three recitation credits per week, first term. Elective for Seniors in Civil Engineering.*

Engineering,—Electrical

PROFESSOR DICKINSON.

The aim of the course in electrical engineering is to give the student such training in the fundamental principles of the subject as will fit him to take up, in an intelligent and effective manner, any line of engineering work requiring special electrical knowledge. Instruction is given in both classroom and laboratory, the aim of each method of instruction being to supplement the other, and to develop resourcefulness and the habit of independent thought on the part of the student.

Subjects

I. Theory of Direct Currents.—A detailed study of the theory of direct-current apparatus. The theory of dynamos, motors, and auxiliary apparatus. *Three recitation credits per week, first term. Required of Juniors in Electrical Engineering and of Seniors in Chemical and Mechanical Engineering.*

II. Direct-Current Laboratory.—A course consisting of tests of various types of direct-current apparatus. These include magnetization and characteristic curves of different types of machines, as well as tests for efficiency, regulation, temperature rise, and tests of a similar nature. *Three laboratory credits per week, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

III a. Principles of Electrical Engineering.—A course designed to emphasize the fundamental laws of electric and magnetic circuits. Special attention is given to the units employed, and to methods of measurement. Inductance and capacity are studied at considerable length, and their effects in circuits of variable E. M. F. is discussed. *One recitation credit per week for the last nine weeks of second term, Sophomore year; and one recitation credit per week for eighteen weeks, first term, Junior year. Required of students in Electrical Engineering.*

IV. Theory of Alternating Currents.—Recitations and lectures. The elements of the theory of alternating currents and of alternating-current machinery. This course includes the simpler theories regarding the action of A. C. dynamos, motors, converters, and transformers. *Two recitation credits per week, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

V. Theory of Alternating Currents.—Recitations and lectures, continuing subject IV. The more advanced theories regarding the effect of inductance and capacity in A. C. circuits, and of the action of A. C. machinery, are discussed. Assigned readings and reports are a feature of the subject. *Three recitation credits per week, throughout the year. Required of Seniors in Electrical Engineering.*

VI. Alternating-Current Laboratory.—A course consisting of tests of different types of alternating-current apparatus, such as single and polyphase generators and motors, induction motors, converters, and transformers. *Three laboratory credits per week, throughout the year. Required of Seniors in Electrical Engineering.*

VII. Design of Electrical Machinery.—General principles of the design of electrical apparatus, including a direct and an alternating current generator. *Three laboratory credits per week, second term. Required of Seniors in Electrical Engineering.*

VIII. Telephone Engineering.—A consideration of the development of the modern telephone, with special reference to the common battery systems. *One recitation credit per week, first term. Required of Seniors in Electrical Engineering.*

X. Transmission of Energy.—A study of systems of high-tension distribution, the effect of capacity and inductance, the construction of lines, their protection, and the troubles developing in high-tension work. *Two recitation credits per week, first term. Required of Seniors in Electrical Engineering.*

XI. Electric Railway Engineering.—A discussion of the economic considerations in the development of an electric railway, methods of construction, the location of the generating station, the design of the distributing system, types of motors, and systems of control. *Two recitation credits per week, second term. Required of Seniors in Electrical Engineering.*

XII. Assigned Work.—Members of the senior class are required to prepare and to present before the class, papers and discussions upon topics of interest to engineers. As a rule, each student presents about eight papers in the course of the year's work. *Three laboratory credits per week, throughout the year. Required of Seniors in Electrical Engineering.*

Engineering,—Mechanical

PROFESSOR WALES, MR. ELDRED, MR. BEAMENSDEKFER, MR. MERRILL.

It is the object of the work in the department of mechanical engineering to turn out broad-gauged, self-dependent men, well trained in engineering theory, familiar with the practical matters of construction and operation, and having some knowledge of the economic relations which the engineer and industrial development bear to modern society. In the endeavor to train men who will touch life, not at one point, but at many, the work of the department is supplemented and rounded out by extended and vigorous courses along the lines of electrical engineering, physics, mathematics, chemistry, English, history, modern languages, and political economy. The special work of the department of mechanical engineering divides itself naturally into the following general groups: shop practice, design, steam engineering, and experimental engineering. Each of the above groups is amplified and briefly described below:

SHOP PRACTICE

The object of this work is to give familiarity with principles, operations, possibilities, and management, rather than to develop the greatest dexterity in manipulation. Shop practice extends over three years of the course, and comprises forging and foundry work, pattern making, and machine-tool operation. The shops are exceptionally well equipped with machines and tools of all kinds. In the machine shop are six metal lathes, speed lathes, planes, 16-in. shaper, two drills, two tool grinders, drill grinder, milling machine, punching-press, vertical boring and turning mill, together with the usual assortment of tools and auxiliaries. The pattern shop is provided with lathes, circular saw, band saw, jig saw, dowel machine, surface and buzz planers, etc. Fifteen work-benches fully provided with the small tools of the pattern maker complete the equipment. The forge shop is equipped with the usual anvils, forges, fullers, swages, hardies, etc., while a full stock of patterns, shovels, riddles, flasks, and trowels is provided for the work in foundry practice. Enthusiasm is given to the work by the construction of things of real value—a new machine for the shop or a piece of apparatus for the laboratory—instead of spending the whole time on worthless “exercises.”

DESIGN

The work along the lines of design extends throughout the four years, beginning with freehand and mechanical drawing and ending with machine design and power-plant design in the Senior year. Leading up to this final work are the terms of mechanical drawing, descriptive geometry, mechanism, valve gears, dynamics of machines, mechanics, strength of materials, hydraulics, and thermo-dynamics. All the forces of correct theory and the practice of the most successful builders are brought to bear upon the solution of definite, practical problems.

STEAM ENGINEERING

Steam engineering begins in the Junior year and runs through the remainder of the course. A rigorous study of the mathematical theory of thermo-dynamics supplies the foundation for the study of boilers and engines, design and economy, and the various devices and auxiliaries of the power plant. In the Senior year is considered the particular branch of heating and ventilating. In this year, also, the subject of power plants is taken up, which applies all the previous training in steam engineering, and which brings together and unifies all allied subjects.

EXPERIMENTAL ENGINEERING

This subject, which extends throughout the Junior and Senior years, is intended to fix the theory developed in all the other lines of work. Instruction is given by means of lectures and laboratory tests. The student becomes familiar with the theory, construction, use, and calibration of the instruments and apparatus used by the engineer, and gains experience in making accurate standard and special tests. The work is divided into four groups: one dealing with the chemical problems of engineering—testing of gases, oils, fuels, feed water, etc.; a second, with general calibration and testing; a third, with the study and tests of structural materials; and the fourth, with general power-plant testing. In power-plant testing the students make the necessary plans and preparations, perform the experimental work, and prepare formal reports, with recommendations for improvement in economy, etc. These tests are made not only on the college power-plants, but on those of manufacturing establishments of the State. The equipment for experimental work

comprises several boilers and steam engines, large steam pump, gas engines, feed-water heaters, several steam and gas engine indicators, steam calorimeters, tanks, scales, injectors, water turbine, hydraulic ram, pulsometer, centrifugal pump, belt pump, weirs, two-stage air compressor, air-brake outfit, meters, gauges, 50,000-lb. tension and compression machine, apparatus for oil and gas testing, fuel calorimeter, complete outfit for testing cements and concretes, etc. Throughout the work the greatest stress is laid upon the correct calculation and interpretation of results, and accuracy and self-dependence are developed to the fullest.

Subjects

I. Mechanical Drawing.—Lettering, freehand sketching, use of drafting tools, geometrical problems, projections, machine parts. *Three laboratory credits per week, first term; two laboratory credits per week, second term. Required of Freshmen in Engineering.* Mr. Beamensderfer and Mr. Merrill.

II. Forge and Foundry.—Forging, drawing, bending, welding, etc. Principles of moulding, core making, and casting. *Three laboratory credits per week, first term. Required of Freshmen in Engineering.* Mr. Eldred.

III. Pattern Making.—Use of tools, bench and lathe work, pattern making. *Three laboratory credits per week, second term. Required of Freshmen in Engineering.* Mr. Eldred.

IV. Graphic Statics.—Force and funicula polygons with applications in the determination of stresses in framed structures. *Two recitation credits per week, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.* Mr. Beamensderfer.

V. Descriptive Geometry.—Elementary principles; problems relating to the point, line, plane, cylinder and double curved surfaces of revolution, intersections, and developments. *One recitation and two laboratory credits per week, first term. Required of all Sophomores in Engineering.* Mr. Beamensderfer.

VI. Mechanical Drawing.—Detail and assembly drawings, elementary machine design. *Three laboratory credits per week, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.* Mr. Beamensderfer.

VII. Machine Shop.—Hand work in chipping and filing, use of machine tools, construction of machines. *Three laboratory credits per week, second term. Required of Sophomores in Electrical Engineering. One and one-half laboratory credits per week, second term. Required of Sophomores in Civil Engineering.* Mr. Eldred.

VIII. Machine Drafting.—Technique of machine drafting, application of kinematics to the design of gears, valves, linkages, quick-return motions, etc. *Three laboratory credits per week, first term. Required of Juniors in Mechanical Engineering.* Mr. Beamensderfer.

IX. Heat Engineering.—Thermo-dynamics.—Mathematical development and discussion of the laws of thermo-dynamics, and their application to perfect gases, saturated and superheated steam. Theory of air compressors, pneumatic machinery, hot-air engines, gas engines, and refrigerating machines. Boilers, engines, engine economy, effect of cylinder walls, compounding, super-heating, use of jackets, varying cut-off, speed, pressure, etc. Flow of fluids, injectors, and thermo-dynamic principles applied to the steam turbine. *Three recitation credits per week, throughout the year. Required of Juniors in Mechanical and Electrical Engineering; and for twenty-seven weeks, of Juniors in Chemical Engineering.* Professor Wales.

X. Applied Mechanics.—Forces, composition and resolution, parallel forces, moments, couples, centres of gravity, velocity, acceleration, energy and momentum, falling bodies and projectiles, centrifugal force, moment of inertia, radius of gyration, angular momentum, energy of rotating bodies, impact, etc. Strength of materials, stresses in structures, riveted joints, beam theory, struts, columns, shafting, springs, etc. Solution of practical problems. Text, Lanza's Applied Mechanics. *Five recitation credits per week for twenty-four weeks. Required of all Juniors in Engineering.* Professor Wales.

XI. Hydraulics.—General principles, head and pressure, center of pressure, velocity of discharge, flow through orifices and over weirs, Bernouilli's theorem, flow through pipes, flow through conduits and canals, energy of flow, horse-power, hydraulic machinery, rams, turbines, centrifugal pumps, and Pelton wheels. Merriman's Treatise on Hydraulics. *Five recitation credits per week, for last twelve weeks of second term. Required of all Juniors in Engineering.* Professor Wales.

XII. Mechanism.—Instantaneous centers, centroids, lobed wheels, belts, pulleys, four-bar linkages, graphical determination of velocity ratios, quick-return motions, straight-line motions, pantographs, trains of gears, epicyclic trains, tooth gearing, epicycloidal and involute teeth, bevel wheels, etc. Schwamb and Merrill's Mechanism. *Three recitation credits per week, second term. Required of Sophomores in Mechanical and in Chemical Engineering.* Mr. Beamensderfer.

XIII. Valve Gears and Dynamics.—Plane slide valves, piston valves, riding cut-off valves; Joy and Marshall gears; Stephenson, Gooch, and Walsheart link motions; drop cut-off valves; Corliss, Brown, and Putnam valves. Peabody's Valve Gears. Lectures and references. *Three recitation credits per week, second term. Required of Juniors in Mechanical Engineering.* Mr. Beamensderfer.

XIV. Machine Shop.—Advanced work in machine construction. *Three laboratory credits per week, throughout the year. Required of Juniors in Mechanical Engineering.* Mr. Eldred.

XV. Experimental Engineering a.—Lectures and laboratory work in gases, oils, and fuels; flue-gas analysis, calculation of air per pound of coal, loss due to excess air and to imperfect combustion; analysis of fuel gases and calculation of heating values; determination of heating values by the Junkers and Parr calorimeters; study of gases in producer and gas-engine work. Analysis of coal and other fuels. Analysis and testing of lubricating and fuel oils. Testing of boiler waters. *Two laboratory credits, first term. Required of Juniors in Mechani-*

cal and Electrical Engineering, and Seniors in Chemical Engineering. Professor Wales.

XVI. Experimental Engineering b.—General calibration and testing of engineering instruments and apparatus; gauges; planimeter; manometers; indicators; Prony brakes; scales; valve setting by measurement and by the indicator; Carpenter calorimeter; Peabody calorimeter; flow through orifices; weirs; nozzles; Pitot tube; meters; Venturi meters; hydraulic ram; turbine, etc. *Two laboratory credits per week, second term. Required of Juniors in Mechanical, Electrical and Civil Engineering.* Mr. Beamensderfer.

XVII. Experimental Engineering c.—Properties of materials. Lectures on the metallurgy of iron and steel; effects of impurities; cold-working; repeated stresses; tensile, compressive, and shearing strengths; ductility; resilience, etc.; copper, brass, bronze, and other alloys; timber, stone, and brick. The manufacture of natural and Portland cements; effects of over-and under-burning, over-liming, SO_3 , etc.; discussion of tests and their interpretation. Laboratory work is parallel with lectures. Tensile strengths of cast-iron, wrought-iron, and steel; compressive strength of metals, timber, concrete, cement; shearing tests of metals; transverse tests of timber and iron; stress-strain diagram, elastic limit, yield point, modulus of rupture; tensile tests of cement; pat tests, boiling tests; specific gravity; fineness; time of set, etc. Determination of the best proportions of cement, sand, and rock of given characteristics. *Two lecture and two laboratory credits per week, first term. Required of Seniors in Mechanical, Electrical, and Civil Engineering.* Professor Wales and Mr. Beamensderfer.

XVIII. Experimental Engineering d.—Hot-air engine, gas engine, steam pump, injectors, transmission dynamometers; boiler tests; complete tests of power plants; outside work on the H. P. of a stream, with tests of hydraulic power plant; outside tests of manufacturing plants, with calculations, reports, and recommendations. *Two laboratory credits per week, second term. Required of Seniors in Mechanical and Civil Engineering.* Professor Wales.

XIX. Heating and Ventilation.—Discussion of the principles and practice of the various systems of heating and ventilating—direct and indirect, hot-air, hot-water, pressure steam, exhaust steam, vacuum systems, fans, blowers; calculation of ventilation and radiation; flues, pipes, and radiators; air troubles; central heating systems with central power plants; design of heating system for a given building. *One recitation credit per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XX. Machine Design.—Design of machine parts from considerations of the motions involved, strength, rigidity, and friction; design of a complete machine; calculations with design of some type of engine, starting with given requirement of H. P., speed, etc., and with an assumed theoretical indicator card. *Three laboratory credits per week throughout the year. Required of Seniors in Mechanical Engineering.* Mr. Beamensderfer.

XXI. Power Plants and Power-Plant Design.—Study of the various types—as to choice, location, installation, and operation; prime movers, their accessories and auxiliaries.

Steam Plants.—Study of the effects on economy, range, and reliability of simple or compound, condensing or non-condensing engines with various valve gears, throttling and cut-off governors, different boiler installations, feed-water heaters, economizers, pressure regulators, pumps, injectors, mechanical stokers, forced and induced draft, chimneys, etc.; calculations of proper sizes, powers, and strengths of machines and apparatus of the power plant; methods of improving economy. The place of the steam turbine in power-plant work.

Hydro Plants.—Discussion of the types of hydraulic machinery, their efficiency, and the particular conditions to which each is best adapted. This will be a development of the previous work in hydraulics to meet the need of the power engineer.

Gas-Producer Plants.—The different suction and pressure producers, theory, capacity, future, etc.; gas engines, from both the thermo-dynamic and the mechanical points of view. *Two lecture credits and one laboratory credit per week, first term. Required of Seniors in Mechanical Engineering. Two lecture credits per week, first term. Required of Seniors in Electrical Engineering.* Professor Wales.

XXII. Assigned Work.—This may be of the nature of research or of specialized study along some particular line of engineering. Options are offered in theory of elasticity, advanced hydraulics, etc. *Three credits per week, throughout the year. Required of Seniors in Mechanical Engineering.*

XXIII. Dynamics of Machines.—Analysis of stresses, effects of inertia, balance, reciprocating parts, flywheels, design of high-speed engines and machinery. *Two recitation credits per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XXIV. Works Management.—The economics of the shop and factory, cost-keeping, efficiency in production. *One lecture credit per week, second term. Required of Seniors in Mechanical and Chemical Engineering.* Professor Wales.

XXV. Elements of Thermo-dynamics.—A non-mathematical discussion of boilers, engines, pumps, and power apparatus for civil engineers. *Three recitation credits per week, first term. Required of Juniors in Civil Engineering.* Mr. Merrill.

XXVI. Industrial Organization and Management.—The organization of engineering industries, and the laws and methods of business applying to them. *Three lecture credits per week, first term. Required of Sophomores in Mechanical Engineering.* Professor Wales.

English

Composition, Rhetoric, and Literature

PROFESSOR BOARDMAN AND PROFESSOR CHURCHILL.

The English department offers subjects in literature and in rhetoric and composition, both written and oral. The required work extends over the four years. Elective subjects in literature are provided for

Juniors and Seniors. Both literature and composition courses place emphasis on the practical and the contemporary phases of the work.

The library is an important factor in the work of the department, as it contains some twelve hundred volumes of representative English and American literature.

Subjects in Literature

PROFESSOR BOARDMAN.

IV. Modern Essays.—Study of representative essays of England and America in the 19th and 20th centuries. *Four recitation credits per week, first term. Required of Juniors in all courses.*

V. Shakspeare.—A course in appreciation, including lectures on the life of Shakspeare, reading of several plays, and careful study of three plays. *Four recitation credits per week, last twelve weeks of the second term. Required of Seniors in all courses*

VI. Literature and Composition.—In kind and amount according to individual need. *Not less than two recitation credits per week, first term. Elective for Freshmen.*

VII. The English Novel.—Study of the development and technique of the novel in England. *Two recitation credits per week, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics courses.*

XI. American Poetry.—An appreciative reading study of American Poetry as a whole, using Stedman's "An American Anthology" as a basis for the work. *Two recitation credits per week, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics courses.*

Rhetoric and Composition

PROFESSOR CHURCHILL.

I. Rhetoric and Composition.—Outlines of rhetorical theory, study of models illustrating the various literary forms, exercises, weekly themes. *Three recitation credits per week, throughout the year. Required of Freshmen in all courses.*

II. Newspaper Work.—The technique of structure and style as applied to newspaper methods. Daily practice, special emphasis on editorial paragraph writing, based on the study of current events. *One recitation credit per week, first term. Required of Sophomores in all courses.*

III. Argumentation.—Theory and Practice. Training in the principles of brief-drawing; weekly practice in extemporaneous speaking and debating. *Two recitation credits per week, second term. Required of Sophomores in all courses.*

VIII. Interpretive Reading.—Training in the fundamental principles of pronunciation, articulation, emphasis, inflection, phrasing, quality, force, pitch, rhythm. Besides the ultimate practical purpose, this course is intended to give the necessary preparation for effective public speaking in the courses in debate and oratory during the Junior and Senior years. *One recitation credit per week, first term. Required of Sophomores in all courses.*

IX. Debating.—Instruction and practice in the art of debate. *One recitation credit per week, throughout the year. Required of Juniors in all courses.*

X. Oratorical Writing and Extemporaneous Speaking.—Critical study of representative English and American orations as models; weekly practice in extemporaneous speaking and in the technique of oratorical writing. Criticism on the construction of one long oration. *One recitation credit per week, throughout the year. Required of Seniors in all courses.*

Geology and Mineralogy

PROFESSOR LEIGHTON, ASSISTANT PROFESSOR SMITH, MR. PERRY.

GEOLOGY.—Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to those characteristics of rocks which are of chief importance in connection with road construction.

DETERMINATIVE MINERALOGY.—A short course dealing with the elements of crystallography is given, together with the physical and chemical characteristics of minerals, especially that of rock-making minerals composing our soils. Laboratory work in blowpipe analysis and physical determination of minerals follows the crystallography.

Subjects

I. Geology.—*Two recitation credits per week, second term. Required of Juniors in Civil Engineering and Sophomores in Agriculture and Applied Science.*

II. Mineralogy.—See Chemistry XI.

History

PRESIDENT EDWARDS, PROFESSOR CHURCHILL.

I. Social, Economic, and Industrial History of the United States.—*Four recitation credits per week, second term. Required of Juniors in all courses.*

II. Government and Politics in the United States.—*Four recitation credits per week, first term, last six weeks; and second term, first six weeks. Required of Seniors in all courses.*

Home Economics

PROFESSOR CAMPBELL.

The aim of this department is to give both theoretical and practical training in the economic administration of the home. The laboratory is situated in a building by itself, which is finished and furnished in such a manner as to demonstrate the sanitary principles involved in proper kitchen arrangements. It is amply equipped with the most recent scientific cooking-apparatus, inclusive of thermometers, metric scales, different kinds of stoves, and individual utensils. The work in chemistry, biology, etc., is, however, carried on in the laboratories of those departments. There is a good home economics library, and students are expected to make intelligent use of the main library in reference work, as well as to study those bulletins of the Department of Agriculture and such state reports as deal particularly with the subjects of food and nutrition.

Subjects

I. Domestic Art.—The subject includes a study of the home industries, the study of the various textile fibers, and development of spinning and weaving, modern processes of manufacture and the comparison of textile fabrics with special reference to suitability to use and economic value. The laboratory work includes both hand and machine sewing, the taking of measurements, selection, alteration, and designing of patterns, the making of aprons, underwear, tailored waists, and dresses. *One laboratory credit per week, first term; and three laboratory and two recitation credits per week, second term. Required of Freshmen in Home Economics.*

III. a. Personal Hygiene.—This subject considers the aim of personal hygiene as the maintaining of the most efficient human machine for the life needs of the individual. It endeavors to give and establish ideals of health and efficiency. *One recitation credit per week, first term. Required of all women Freshmen.*

III. b. Euthenics.—The following topics are considered: environment of human life; problems of adaptation to modern conditions and progress; personal aim; individual responsibility; factors in human efficiency. *One recitation credit per week, second term. Required of all women Freshmen.*

IV. Foods.—A systematic study is made of the food constituents, their sources, chemical composition, properties, nutritive and economic values. This course is accompanied by laboratory practice in the preparation of many representative foods. Class demonstrations are given from time to time. *Three recitation and three laboratory credits per week, first term; two recitation and one and one-half laboratory credits per week, second term. Required of Sophomores in Home Economics. Prerequisites: Chemistry I, II.*

VI. Human Nutrition.—Composition of the animal body and its daily food requirements; methods of investigation employed in studying the nutritive function of foods; the changes affected by cooking and by the processes of digestion; balancing of dietaries; food economy. *Three recitation credits per week, first term. Required of Juniors in Home Economics. Prerequisite: Chemistry IV, Zoölogy X, Home Economics IV.*

VII. Home Decoration.—A study of the evolution of the house; its adaptation to modern conditions; the principles to be followed in planning, furnishing, and decorating the house from a sanitary and artistic standpoint. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Prerequisite: Home Economics IX.*

VIII. Dietetics.—Problems in nutritive ratios; the balanced dietary; hygienic combinations of foods; construction of menus; adaptation of the diet to age, occupation, health, and different climatic conditions. *Two recitation and one laboratory credit per week, second term. Required of Juniors in Home Economics. Prerequisite: Home Economics VI.*

IX. Sanitation.—This subject deals with household and public hygiene. Study of health and the causes of disease; vital resistance; susceptibility and immunity; infection and contagion; pollution of food and water supplies; prevention and inhibition of infection, decomposition and decay. *Two recitation credits per week, first term. Required of Juniors in Home Economics.*

X. Food Preservation.—Study of the processes of decomposition, fermentation, and putrefaction; practice in preserving foods by drying, salting, and sterilization; preparation of jelly, pickles, and canned fruits; discussion of commercial preservatives. *One laboratory credit per week, first term. Elective of Seniors in Home Economics. Prerequisite: Home Economics IX.*

XI. Hygiene and Care of Children.—A study of the physical development of children; care of infants and young children; school hygiene. *Two recitation credits per week, first term. Required of Seniors in Home Economics. Prerequisite: General Psychology. Open to Juniors and Seniors in other courses.*

XII. Home Nursing.—Care of the sickroom and patient; administration of medicines; recording of symptoms; accidents and emergencies; hygiene of infectious diseases; antiseptics and disinfectants. *One recitation credit per week, second term. Required of Seniors in Home Economics. Prerequisite: Home Economics IX.*

XIV. Assigned Work.—This may be a problem in the biological, chemical, physiological, or economic aspect of the work in Home Economics. *Three recitation and two laboratory credits per week, second term. Required of Seniors in Home Economics.*

XV. Teaching of Home Economics.—Purpose and method of the work; courses of study, equipment, etc. *One recitation credit per week, second term. Elective for Seniors in Home Economics.*

XVI. History of Home Economics.—Development of home economics movement; a study of the work as presented in different types of institutions, and its

industrial, educational, and sociologic aspects. *One recitation credit per week, first term. Elective.*

XVIII. Dressmaking and Tailoring.—*Three laboratory credits per week, second term. Elective for students who have completed Home Economics I.*

XX. A Study of the Family.—Development of the domestic institutions; social ethics of the family; legal, industrial, and educational problems of the household. *Two recitation credits per week, second term. Prerequisite: Home Economics V. Elective.*

XXI. Home Administration.—This subject includes the care of the home, the planning, buying, preparation and serving of menus suitable for various occasions, methods of simplification of home duties, division of income, and keeping of household accounts. *One recitation and two laboratory credits per week, first term. Prerequisite: Home Economics VIII. Required of Seniors in Home Economics.*

HORTICULTURE

PROFESSOR COBB, MR. GODIN.

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the horticultural building. The main building contains the office and recitation rooms, together with photographic rooms. Attached to this building are greenhouses of modern construction, containing over 8,000 square feet under glass, 3,000 square feet of which is used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens, and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity for the study of apples and pears especially. There is also a small vineyard. A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects

I. Propagation of Plants.—Different methods, including seed testing. Soft, green, and hardwood cuttings. Layering, grafting, and budding. *One recitation and one laboratory credit per week, first term. Required of Freshmen in Agriculture and Applied Science.*

II. Vegetable Gardening.—Underlying principles and types of vegetable gardening; study of individual crops; text-book work. *Two recitation credits per week, second term. Required of Freshmen in Agriculture. Option for Seniors in Applied Science.*

III. Fruit Culture.—Fundamental principles of orcharding; soil, fertilizer, and cultivation. Methods of laying out orchards and planting. Tillage, pruning and spraying. Harvesting and storing fruits. Collateral reading and practical work. *Two recitation credits per week, first term. Required of Juniors in Agriculture. Option for Juniors in Applied Science.*

IV. Spraying and Pruning.—Preparation and application of spray mixtures; insecticides and fungicides. Methods of application for different orchard enemies, and machinery used. Pruning of trees and ornamental shrubs. *One recitation and one laboratory credit per week, second term. Required of Freshmen in Agriculture. Option for Seniors in Applied Science.*

V. Greenhouse Construction and Management.—Study of the different types of glasshouse structures; methods of heating and ventilating. *One recitation and two laboratory credits per week, second term. Option for Juniors in Agriculture.*

VIa. Floriculture.—History of floriculture. Study of greenhouse plants, collectively and individually; practical work in propagation, potting, watering, ventilating, fumigating, and spraying. Study of bulbs, bedding plants, palms and ferns. *One recitation and two laboratory credits per week, entire year. Option for Seniors in Agriculture. Prerequisite: Horticulture V.*

VIII. Literature of Horticulture.—See Agronomy IX.

IX. Assigned Work.—Special subjects chosen by the student. *Option for Seniors in Agriculture. Hours to be arranged.*

X. Pomology.—Orchard and bush fruits. Study of types; origin, and history; classification, description, and methods of handling. Orchard management. *One recitation credit and two laboratory credits per week, throughout the year. Option for Seniors in Agriculture and Applied Science. Prerequisite: Horticulture III.*

XI. Advanced Vegetable Gardening.—Study of one or more crops selected by student. Practical work, research work, and text-book. *One recitation credit and two laboratory credits per week, second term. Option for Seniors in Agriculture.*

XII. Plant Breeding.—See Agronomy XI.

XIII. Advanced Landscape Gardening.—A continuation of Horticulture VII, including an advanced study of the art which embraces the following points: Topographical surveying and map work, drainage, grading, specifications, etc. Park and cemetery work, civic improvement. *One recitation and two laboratory credits per week, throughout the year. Option for Seniors in Agriculture. Prerequisite: Horticulture XVI.*

XIV. Arboriculture.—Study of ornamental trees, shrubs, and other plants, both native and exotic, which are used in landscape gardening. This subject is designed to enable the student to become familiar with the character, habit

and adaptation of ornamental plants. *One recitation and one laboratory credit per week, first term. Option for Sophomores in Agriculture.*

XV. Tree Surgery.—A study of methods used in treating diseases of trees and shrubs. Treatment of insect injuries, preventive and remedial measures such as chaining and bolting, to be used in case of neglect, and mechanical injuries. Cement filling of cavities. *One recitation and two laboratory credits per week, second term. Option for Seniors in Agriculture.*

XVI. Landscape Gardening.—This subject is designed for students in general and consists of the rules and principles governing landscape gardening, the design and laying out of grounds for farm, village and city places, making of lawns, flower beds, etc. *One recitation and two laboratory credits per week, first term. Required of Juniors in Agriculture. Option for Seniors in Applied Science. Prerequisite: Horticulture XIV.*

A. Vegetable Gardening.—Fundamental principles of vegetable growing. Practical work in cold frames, hotbeds, and garden planting. *Three recitation credits and one and one-half laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year.*

B. Fruit Culture.—Study of fruits; propagation; planning fruit gardens and plantations; harvesting and packing; care. *Three recitation credits and one laboratory credit per week, first term. Required of Short-Course students in Agriculture, second year.*

E. Spraying and Pruning.—A study of the methods used in combating insect pests and plant diseases. Preparation and application of fungicides and insecticides. Study of nozzles, pumps, etc. *Two recitation and one and one-half laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year.*

F. Home Grounds.—A study of the materials to use, the essential principles of the art. Practice in designing, planting, and care of home grounds. *Three recitation credits per week, second term. Required of Short-Course students in Agriculture, second year.*

Languages, Modern

MISS MYRICK.

FRENCH

I. Elementary French.—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits per week, throughout the year.*

II. Reading of intermediate texts, composition, conversation, selections from Hugo's *Les Misérables* or similar work. *Three recitation credits per week, throughout the year.*

III. Scientific and Classical French.—*Three recitation credits per week throughout the year. Elective for students who have taken I and II or their equivalents.*

IV. Scientific French.—*From three to five recitation credits, first term, Freshman year. Elective for Freshmen.*

GERMAN

I. Elementary German.—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits per week, throughout the year. Required of Freshmen who do not offer German for entrance.*

II. Reading of texts portraying German life and institutions, composition, conversation. *Three recitation credits per week, throughout the year. Required of Sophomores in Agriculture, Applied Science, Home Economics, and Chemical Engineering.*

III. Scientific German.—*Three recitation credits per week, throughout the year. Elective for students who have taken I and II or their equivalents.*

IV. Scientific German.—*From three to five recitation credits per week, first term, Freshman year. Elective for Freshmen.*

Mathematics

PROFESSOR TYLER, MR. BILLS.

Subjects

I. Higher Algebra.—*Five recitation credits per week, nine weeks, first term. Required of Freshmen in Engineering and Applied Science. Professor Tyler, Mr. Bills.*

II. Trigonometry.—*Five recitation credits per week, nine weeks, first term. Required of all Freshmen. Professor Tyler, Mr. Bills.*

III. Algebra.—*Five recitation credits per week, nine weeks, first term. Required of Freshmen in Agriculture and Home Economics.*

VIII. a. Analytics.—*Five recitation credits per week, second term. Required of Freshmen in Engineering. Professor Tyler, Mr. Bills.*

VIII. b. Analysis.—*Five recitation credits per week, second term. Required of Freshmen in Applied Science.*

X. Calculus.—*Five recitation credits per week, first term. Required of Sophomores in Engineering. Professor Tyler.*

XI. Calculus (completed).—*Five recitation credits per week, second term. Required of Sophomores in Engineering. Professor Tyler.*

XII. University Algebra.—*Three recitation credits per week, first term. Elective for Freshmen.*

XIII. Practical Computations.—*Three recitation credits per week, second term. Elective for Freshmen.*

XIV. Spherical Trigonometry.—*One recitation, first term. Elective as an extra.*

XV. Solid Analytics.—*One recitation, second term. Elective as an extra.*

Military Science and Tactics

CAPTAIN DOVE.

All male college students are required to take military instruction as prescribed, both practical and theoretical, during their attendance at college, unless excused by reason of physical disability. They may, however, be excused after service during four collegiate years, but no student who has completed four years of practical work (drill) in this department shall be eligible to appointment thereafter as a commissioned officer in the cadet battalion; except that in the band the chief musician may, in the discretion of the president, be given the rank of second lieutenant. Credit is given for this work on the same basis, and under the same regulations, as in other departments.

For this instruction the War Department furnishes the necessary number of United States magazine rifles, cal. 30, model of 1898 (Krag-Jorgensen pattern), and equipments, and ammunition for gallery practice with the .22 cal. rifle.

The cadet organization this year consists of a battalion of infantry (four companies) and a band.

In the practical instruction infantry drill and training will be considered paramount. The theoretical course is based strictly upon the main object of the military instruction, and will consist largely of talks or lectures, illustrated by lantern slides or objects whenever possible.

The aim of these military exercises is to improve the physique, to inculcate the habit of prompt and cheerful obedience and courtesy to rightfully constituted authority, to exercise an elevating influence on the conduct of the corps of cadets, and as far as possible to qualify students who take the military course to be company officers of infantry, volunteers or militia, if necessary.

For the purpose of holding a competitive drill between the companies to determine the best drilled company, a competitive drill to determine the best drilled private, and such other exercises as may be determined upon, May 21, 1915, has been set aside as Military Day, the afternoon to be devoted to the program as arranged.

The military department is inspected annually by an officer of the General Staff, U. S. Army, detailed from Washington, and the

names of such students of the graduating class each year as have shown special aptitude for military service will be reported to The Adjutant General of the Army, and a copy of such report sent to the Adjutant General of each State of which such graduates are residents.

All students in the military department are required to supply themselves, through the commandant, with the prescribed uniform, which consists of dark blue blouse, cap and trousers, white collar and white gloves, military pattern, and black shoes; the insignia of rank of officers and non-commissioned officers to conform to that of the infantry, United States Army.

Uniforms must be worn at all ceremonies, drills, and other forms of practical instruction.

Subjects

I. Practical Instruction.—(a) Infantry Drill Regulations, including the school of the squad, of the company, and of the battalion. Intrenchments. Ceremonies and inspections. (b) Text,—“Small Arms Firing Manual.” Sighting drills, position and aiming drills, gallery practice, estimating distance. (c) Text,—“Field Service Regulations.” Orders, advance guards, flank guards, rear guards, outposts, patrolling, and marches whenever possible. (b) Text,—“Manual of Guard Duty.” *Two exercises of one hour each per week, counting as one credit, throughout the year. Required of all male students.*

II. Theoretical Instruction.—United States Infantry Drill Regulations. Small Arms Firing Regulations. Manual of Guard Duty. Field Service Regulations of United States Army. *One recitation credit per week, last nine weeks of first term and first nine weeks of second term. Required of all Freshmen.*

III. Theoretical Instruction.—United States Infantry Drill Regulations, Small Arms Firing Regulations, Manual of Guard Duty, Field Service Regulations of the United States Army, instruction in the preparation of reports, returns, orders, etc., in the method of correspondence, military map reading and map problems, and, in general, in the duties of company and battalion officers. *One recitation credit per week, first nine weeks of first term, and first nine weeks of second term. Required of all commissioned officers.*

IV. Theoretical Instruction (advanced).—*One recitation credit per week, second nine weeks of first term, and second nine weeks of second term. Elective for all commissioned officers.*

Physics

PROFESSOR DICKINSON, ASSISTANT PROFESSOR COGGINS.

Physics is regarded as a fundamental science, a mastery of which is essential to success in engineering, or in any calling involving the

application of scientific methods and processes. Therefore emphasis is placed upon the practical applications of the principles involved, not only for the purpose of affording preparation for future work, but with the idea of stimulating the student to an interest in his professional work.

At the same time, some effort is made to present the subject from the standpoint of a pure science, and to instill in the student a respect for scientific methods, and to prepare him for advanced work in research and investigation. Advanced mathematics is employed, wherever its use is deemed necessary for a rigorous and complete development of the subject.

Instruction is given in both class-room and laboratory, the two methods being closely correlated. The department is well equipped with high grade apparatus, much of which has been recently imported. In mechanics, special attention is given to problems involved in the application and transmission of power.

In the laboratory of heat measurements, the problems involved in the transformation of heat into useful energy, are strongly emphasized.

In light, the department is able to carry on work of the usual college grade, being well equipped with high grade photometers, spectrometers, interferometers, and refractometers.

The laboratory of electrical measurements is particularly well equipped for the carrying on of advanced work.

Subjects

I. Descriptive Physics.—A course designed for students in Agriculture and Home Economics. The course furnishes an excellent foundation for further work in physics. *Five recitation credits per week, second term. Required of Sophomores in Agriculture and Home Economics.*

II. General Physics.—A mathematical treatment of the subject, in which a knowledge of elementary Physics is presupposed. *Four recitation credits per week, throughout the year. Required of all Sophomores in Engineering and Applied Science.*

III. Laboratory Physics.—A course in physical measurements intended to teach students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits per week, throughout the year. Required of Sophomores in Engineering and Applied Science.*

V. Electrical Measurements.—Direct-current measurements, resistance, potential, current, magnetic properties of iron and steel, calibration of direct-current

instruments. *One and one-half laboratory credits per week, first term. Required of Juniors in Electrical Engineering.*

VI. Principles of Illumination.—A study of different sources of light, photometrical measurements, and the principles of illuminating engineering. *One recitation credit and one and one-half laboratory credits per week, first term. Required of Juniors in Electrical Engineering.*

Physical Training

MISS BAILEY.

All women students are required to attend the gymnasium exercises. These are designed to improve the general health of the young women and to train them in agility, poise and general gracefulness, and to develop alertness and a ready response to any order or request. The exercises are confined to the lighter work of a gymnasium because of a lack of other equipment.

I. Marching; free arm exercises; wand and dumb-bell exercises; Indian club swinging. *One laboratory credit per week, throughout the year. Required of all women students.*

Psychology and Education

PROFESSOR BOARDMAN.

The subjects in education provide instruction in the theory of the subject as derived from general and educational psychology, and in the history of education. As a part of the work visits are made to neighboring elementary and secondary schools for the purpose of observing the technique of the recitation with special reference to the courses in science.

Subjects

I. History of Education.—Study of educational theory and practice from the historical point of view, with reference to modern scientific and industrial education. *Three recitation credits per week, first term. Required of Seniors in Applied Science: Elective for Seniors in Home Economics.*

II. Principles of Education.—Study of the principles and methods of teaching. *One recitation credit per week, first term. Required of Seniors in Applied Science: Elective for Seniors in Home Economics.*

III. Secondary Education.—Principles of teaching, with special reference to the aims of the secondary schools, organization, management, and method in the high school. *Three recitation credits per week, second term. Required of Seniors in Applied Science: Elective for Seniors in Home Economics.*

IV. General Psychology.—Structure and functions of mental life; simple experiments. *Three recitation credits per week, first term. Required of Juniors in Applied Science and Home Economics.*

VIII. How to Study.—A practical course, based on psychological principles, designed to increase the efficiency of students. *One recitation credit per week, first nine weeks of the first term. Required of all Freshmen.*

Zoölogy

PROFESSOR BARLOW.

The work in this department is designed to meet the needs of two classes of students, those who are interested in the economic aspect of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic importance of the different orders. Much time is allotted to entomology, and in this subject special attention is given to injurious species. For those who are to be teachers, a thorough training is given in the morphology and classification of animals as a preparation for the more special subjects that follow. In these attention is directed to the habits and relations of animals which are studied both in the field and laboratory.

The laboratory is equipped with a series of charts, valuable models, and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about one hundred cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes. The necessary instruments for laboratory work can be procured at small cost at the college store.

Subjects

I. Invertebrate Zoölogy.—Discussion of the more important laws of biology and the dissection of representatives of the more important Phyla. *Two laboratory credits and one recitation credit per week. Second term. Option for Juniors in Applied Science.*

II. General Zoölogy.—Special attention is given to the relation of animals to their surroundings. *Two laboratory credits and one recitation credit per week, second term. Option for Seniors in Applied Science.*

IV. Economic Entomology.—*One laboratory and three recitation credits per week, second term. Option for Juniors in Agriculture and Applied Science.*

V. General Entomology.—*Two laboratory credits and one recitation credit per week, first term; two recitation and two laboratory credits per week, second term. Option for Seniors in Applied Science.*

VI. Systematic Entomology.—*Three or five laboratory credits per week, throughout the year. Elective for those who are taking or have taken Zoölogy V.*

VIII. Histology and Embryology.—*Three laboratory and two recitation credits per week, first term. Required of Juniors in Home Economics. Option for Juniors in Applied Science.*

IX. Methods in Nature Study.—*Bird life, habits of insects, aquaria. One and one-half laboratory or field credits per week, second term. Elective.*

X. Vertebrate Zoölogy.—*The anatomy and physiology of the higher vertebrates. Two laboratory and two recitation credits, throughout the year. Required of Sophomores in Agriculture, Home Economics and Applied Science.*

A. Animal Life.—*This subject deals with animals of economic importance. Special attention is given to injurious insects. Three recitation and two laboratory credits, second term, second year. Short course in Agriculture.*

Student Organizations

Athletic Association

DANIEL GASKILL ALDRICH	President.
LESTER WILLIAM LLOYD	Vice-President.
WILLIAM JOSEPH BECKER	Secretary.

Agricultural Club

CARLISLE HALL	President.
CLIFFORD MURDOCK RICE	Vice-President.
SOLOMON FINE	Secretary.
ASHBEL RUSSELL WELLES	Treasurer.

Debating Society

DANIEL GASKILL ALDRICH	President.
DEAN BLENUS FRASER	Vice-President.
SOLOMON FINE	Secretary.
HENRY EDMUND MEDBERY	Treasurer.

Glee Club

CARLISLE HALL	Manager.
CLIFFORD ARNOLD ALLENSON	Leader.

Lecture Association

NORMAN HARRISON BORDEN	President.
PROFESSOR WEBSTER	Treasurer.

Student Council

ALFRED PATRICK KIVLIN	President.
JAMES MURRAY HENRY	Vice-President.
ERNEST ELMER REDFERN	Secretary.

Dramatic Club

FRANCIS JAMES PYNE	President.
HAROLD BURLIN SMITH	Vice-President.
ETTA ELIZABETH MEEARS	Secretary.
JOHN LOUIS JACKOWITZ	Treasurer.

Young Men's Christian Association

ROBERT WILLIAM BELFIT.....	President.
THOMAS WILLIAM FREEMAN.....	Vice-President.
ASHBEL RUSSELL WELLES.....	Secretary.
JAMES HUGH WILLIAMSON.....	Treasurer.

Young Women's Christian Union

MARION READ YORK.....	President.
EMILIE MAY CURRAN.....	Vice-President.
DOROTHY THORNTON MAXFIELD.....	Secretary.
EDITH BECKFORD KINGMAN.....	Treasurer.

BATTALION ORGANIZATION, FIRST TERM, 1914-15

Commandant

WILBUR E. DOVE, Captain, United States Army.

CADET OFFICERS AND NON-COMMISSIONED OFFICERS.

Battalion.

Major.....	GEORGE H. BALDWIN.
First Lieutenant and Adjutant.....	JOHN L. JACKOWITZ.
Second Lieutenant, Quartermaster and Commissary.....	RAYMOND L. BARNEY.
Sergeant Major.....	CLIFFORD A. ALLENSON.
Quartermaster Sergeant.....	ROYAL G. HUDSON.
Color Sergeant.....	HENRY C. KELLY.
Color Sergeant.....	ALFRED P. KIVLIN.

Company A.

Captain.....	MILTON H. PRICE.
First Lieutenant.....	CURTIS W. GATES.
Second Lieutenant.....	HARRY O. V. NORDQUIST.
First Sergeant.....	THOMAS W. FREEMAN.
Co. Quartermaster Sergeant.....	FRANK A. FARON.
Sergeant.....	CHARLES E. SEIFERT.
Sergeant.....	<i>Vacancy.</i>
Corporal.....	KENNETH M. SLOCUM.
Corporal.....	EDWIN D. HILL.
Corporal.....	ROSWELL W. HENNINGER.
Corporal.....	DAVID A. REDFORD.
Corporal.....	ASHBEL R. WELLES.

Company B.

Captain.....	LEROY A. WHITTAKER.
First Lieutenant.....	WESLEY C. MILLER.
Second Lieutenant.....	ROBERT W. BELFIT.
First Sergeant.....	JAMES M. HENRY.
Co. Quartermaster Sergeant.....	WESLEY C. BRIGHAM.
Sergeant.....	DEAN B. FRASER.
Sergeant.....	PHINEAS M. RANDALL, JR.
Corporal.....	PHILIP R. CLOKE.
Corporal.....	THEODORE A. PALMER.
Corporal.....	THOMAS F. VICTORY.
Corporal.....	AUBREY H. THAYER.
Corporal.....	JOHN T. KARLSON.

Company C.

Captain.....	JOHN BRECHIN.
First Lieutenant.....	WILLIAM E. LEWIS.
Second Lieutenant.....	FRANKLIN P. GODDARD.
First Sergeant.....	ERNEST G. FIELD.
Co. Quartermaster Sergeant.....	CLARENCE H. PARKER.
Sergeant.....	CARLISLE HALL.
Sergeant.....	EARL C. WALMSLEY.
Corporal.....	LEON I. HARRIS.
Corporal.....	CHARLES I. MILNES.
Corporal.....	SETH F. H. LAGERSTEDT.
Corporal.....	JAMES H. WILLIAMSON.
Corporal.....	RAYMOND D. TAYLOR.

Company D.

Captain.....	NORMAN H. BORDEN.
First Lieutenant.....	FRANK E. TABOR.
Second Lieutenant.....	RALPH L. PARKER.
First Sergeant.....	EVAN B. JANSON.
Co. Quartermaster Sergeant.....	ERNEST E. REDFERN.
Sergeant.....	RALPH E. GLASHEEN.
Sergeant.....	<i>Vacancy.</i>
Corporal.....	LEONARD S. HOLLEY.
Corporal.....	EARL J. HOPE.
Corporal.....	VINCENT C. YOUNG.
Corporal.....	JAMES A. CLARK.
Corporal.....	DONALD J. KENDALL.

Band.

Chief Musician, with the rank of Second Lieutenant.....	ALBERT C. HUNTER.
Principal Musician.....	CHESTER W. RUGG.
Drum Major.....	JOSEPH E. NICHOLS.
Sergeant.....	JOHN PREMOS.
Sergeant.....	FRANK J. LENNOX.
Corporal.....	HENRY F. DANIELS.
Corporal.....	CLINTON D. HAWKINS.
Corporal.....	THEOSE E. TILLINGHAST.

Alumni Association

RANDOLPH HAYWOOD CARPENTER, 1910. President.
New York City.

FRANK HAROLD BRIDEN, 1913. Vice-President.
Central Falls.

HOWLAND BURDICK, 1895. Secretary-Treasurer.
Kingston.

Executive Committee.

RANDOLPH H. CARPENTER, 1910. HOWLAND BURDICK, 1895.
FRANK H. BRIDEN, 1913. HENRY N. BARLOW, 1912.
EDITH C. KEEFER, 1903.

Prizes and Honors

THE KINGSTON PRIZES.

The sum of sixty dollars offered by a friend of the college to encourage literary work among the students, was divided in 1914 into three portions, providing a first prize of twenty-five dollars, a second of twenty, and a third of fifteen dollars, for the best essays submitted in a contest held in June, 1914. The awards were as follows:

FIRST PRIZE:

"The Relation of the Engineer to Conservation," Dean Blenus Fraser.

SECOND PRIZE:

"The Military Unpreparedness of the United States," Frank Howard Baxter.

THIRD PRIZE:

"The Monroe Doctrine, Yesterday and Today," Harry Cohen.

HONORS.

Honors awarded Commencement Day, June 15, 1914:

FINAL HONORS FOR FOUR YEARS:

Highest Honors—Harold William Browning.

High Honors—Lorenzo Foster Kinney, Jr., James Hilton Aldred, Helen Wheeler Ford.

Honors—Myron Angell Hawkins.

SENIOR HONORS.

Harold William Browning,
James Hilton Aldred,
Helen Wheeler Ford,
John Leo Sullivan,
Lorenzo Foster Kinney, Jr.,
Frederick Otto Aspinwall.

JUNIOR HONORS.

Robert William Belfit,
Norman Harrison Borden,
Adelaide Gilbert Watson,
Albert Clayton Hunter,
Wesley Clifton Miller.

SOPHOMORE HONORS.

Charles Edward Seifert.

FRESHMAN HONORS.

James Hugh Williamson,
Peter Joseph Anthony Comi,
Solomon Fine,
Philip Smoot.

Marine Laboratory Scholarship

A scholarship of fifty dollars was offered by another friend of the college to the best available student in the department of botany. The scholarship could be used for the study of botany at Woods Hole or Cold Spring Harbor for the summer session of 1914. The award was made to Solomon Fine, 1917, who studied at Woods Hole.

Alumni Student-Loan Fund

A small fund established by the Alumni Association in 1911, and added to from time to time, is available for short-time loans, under conditions approved by the President of the College, to worthy and needy students during their Junior and Senior years.

Degrees Conferred in 1914

Bachelor of Science

James Hilton Aldred,
William Edward Anderson,
Frederick Otto Aspinwall,
Frank Howard Baxter,
Robert John Benson,
Edward James Boulester,
Harold William Browning,
Thomas Rowley Connor,
Henry Ellis Davis,
James Russell Esty,
Myron Whitmarsh Finch,
Helen Wheeler Ford,

Myron Angell Hawkins,
Carleton Walter Jones,
Herman Harry Karmann,
Lorenzo Foster Kinney,
Frieda Reiner,
Herbert Reiner,
Louis Rossi,
Edith Marie Safford,
John Leo Sullivan,
William Henry Tully,
Harvey Robert Turner,
William Harry Webb,

Earl Clifton Webster.

Master of Science

Dorothy Walcott Caldwell,
Marguerite White Elkins.

Honorary Degree

David Webster Hoyt, Doctor of Science.

Students

Graduates

Heath, Bertha May (B. S., R. I. S. C., 1910).....Kingston.

Seniors

Baldwin, George Holland, Agr.....Valley Falls.
 Barney, Raymond Livingston, Appl. Sci.....Providence.
 Belfit, Robert William, Chem. Eng.....Kingston.
 Borden, Norman Harrison, Chem. Eng.....Providence.
 Brechin, John, Mech. Eng.....Bristol.
 Brownell, Kenneth Allen, Chem. Eng.....Adamsville.
 Cloke, Philip Royal, Elec. Eng.....Kingston.
 Coleman, Carl Lafayette, Agr.....Kingston.
 Dodge, William Earl, Civ. Eng.....Block Island.
 Gates, Curtis Wolcott, Chem. Eng.....Kingston.
 Hall, Carlisle, Agr.....Kingston.
 Harding, Ada LaPlace, Home Econ.....Lyme, Conn.
 Harris, Leon Irving, Elec. Eng.....Kingston.
 Hudson, Royal Carlton, Appl. Sci.....Phenix.
 Hunter, Albert Clayton, Appl. Sci.....East Providence.
 Jackowitz, John Louis, Appl. Sci.....East Providence.
 Keith, Lawrence Fuller, Agr.....Kingston.
 Kivlin, Alfred Patrick, Elec. Eng.....Kingston.
 Lennox, Frank Joseph, Chem. Eng.....Woonsocket.
 Meade, John Edward, Civ. Eng.....Nasonville.
 Miller, Wesley Clifton, Elec. Eng.....Providence.
 Nichols, Joseph Elton, Mech. Eng.....Woonsocket.
 Nordquist, Harry Oscar Valdimar, Civ. Eng.....Providence.
 Parker, Ralph Langley, Agr.....Kingston.
 Price, Milton Harris, Agr.....Providence.
 Soong, Aloy, Appl. Sci.....Canton, China.
 Watson, Adelaide Gilbert, Home Econ.....Peace Dale.
 Whittaker, Leroy Allen, Elec. Eng.....Central Falls.
 Wilcox, Harold Clayton, Agr.....Kingston.

Juniors

Allenson, Clifford Arnold, Elec. Eng.....Central Falls.
 Anthony, Harold Congdon, Agr.....Newport.
 Burr, Dorothy Isabelle, Home Econ.....East Providence.
 Carleton, Everett Augustus, Agr.....Kingston.

Chantler, Ambrose Royle, Chem. Eng.	Pawtucket.
Clarke, Helena Frances, Appl. Sci.	East Greenwich.
Conyers, Clarence John, Agr.	Providence.
Cordin, Gilbert Ralph, Chem. Eng.	Providence.
Curran, Emilie May, Home Econ.	Pawtucket.
Daniels, Henry Fales, Civ. Eng.	Pawtucket.
Faron, Frank Aloysius, Elec. Eng.	Woonsocket.
Field, Ernest George, Mech. Eng.	Providence.
Fraser, Dean Blenus, Civ. Eng.	Kingston.
Freeman, Thomas William, Civ. Eng.	Fort Adams.
Glasheen, Ralph Earl, Civ. Eng.	Brockton, Mass.
Goddard, Franklin Perry, Elec. Eng.	Newport.
Hanlin, William Frank, Agr.	Arlington.
Henry, James Murray, Mech. Eng.	Kingston.
Hill, Edwin Douglas, Agr.	Providence.
Holley, Leonard Stanley, Agr.	Peace Dale.
Hoxsie, Annie Sarah, Home Econ.	Canonchet.
Kelly, Henry Clinton, Civ. Eng.	Nayatt.
Kirk, Robert Charles, Civ. Eng.	Pawtucket.
Lagerstedt, Seth Frederick Hadley, Agr.	Kingston.
Lewis, George Mitchell, Appl. Sci.	Kingston.
Lewis, William Emanuel, Agr.	East Providence.
Lloyd, Lester William, Agr.	Chester, Mass.
Lussier, George Emile, Elec. Eng.	Woonsocket.
McIntosh, Albert Edward, Civ. Eng.	Providence.
McLeod, Leander Wallace, Mech. Eng.	Providence.
Meears, Etta Elizabeth, Home Econ.	Kingston.
Milnes, Charles Irving, Chem. Eng.	Providence.
Palmer, Theodore Andrew, Agr.	Hope Valley.
Parker, Clarence Howard, Mech. Eng.	Kingston.
Randall, Bertha Adelaide, Home Econ.	Providence.
Randall, Phineas Munsell, Elec. Eng.	Westerly.
Redfern, Ernest Elmer, Chem. Eng.	Woonsocket.
Rowell, Homer Ransom, Agr.	Groveland, Mass.
Rugg, Chester Warren, Civ. Eng.	Kingston.
Seifert, Charles Edward, Elec. Eng.	Chepachet.
Short, Carleton Webb, Chem. Eng.	East Providence.
Tabor, Frank Edward, Mech. Eng.	Slatersville.
Victory, Thomas Francis, Elec. Eng.	Warren.
Walmsley, Earl, Chem. Eng.	Anthony.
Young, Vincent Case, Mech. Eng.	Bristol.

Sophomores

Aldrich, Daniel Gaskill, Agr.	Georgiaville.
Ames, Arnold Willard, Elec. Eng.	Westerly.
Anderson, John Gordon, Appl. Sci.	Westerly.
Ash, Richard Palmer, Elec. Eng.	Bridgewater, Mass.

Barrows, Henry Harold, Agr.	New Haven, Vt.
Barrows, Lucius Crosby, Mech. Eng.	New Haven, Vt.
Bartels, Henry Arthur, Agr.	New York, N. Y.
Becker, William Joseph, Mech. Eng.	Ridgewood, N. J.
Brigham, Wesley Crowell, Elec. Eng.	Pawtucket.
Browne, Elizabeth Hope, Home Econ.	Pawtucket.
Clarke, James Andrew, Chem. Eng.	Providence.
Cohen, Harry, Civ. Eng.	Providence.
Comi, Peter Joseph Anthony, Civ. Eng.	Westerly.
Datson, Olive Marguerite, Home Econ.	Westerly.
DeMay, Winfred West, Civ. Eng.	Wethersfield, Conn.
Dunham, Leslie Lincoln, Agr.	Brockton, Mass..
Easterbrooks, Wilfred Ross, Civ. Eng.	Wakefield.
Ebbs, Robert Allen, Chem. Eng.	Newport.
Edmonds, Charles Joseph, Chem. Eng.	Olneyville.
Fine, Solomon, Appl. Sci.	Attleboro, Mass.
Flynn, William Augustus, Civ. Eng.	Providence.
Fritsch, William Norman, Civ. Eng.	Providence.
Gibbs, Ralph Williams, Civ. Eng.	West Barrington.
Gillis, William Ellis, Chem. Eng.	East Providence.
Gordon, Beale Mitchell, Agr.	Providence.
Greenhalgh, Frank Elmer, Civ. Eng.	Chepachet.
Griffith, Robert Fessenden, Agr.	Barrington.
Harry, Charles Edward, Agr.	East Providence.
Hawkins, Clinton Dexter, Chem. Eng.	Pawtucket.
Henninger, Roswell Woodward, Agr.	Williamsport, Pa.
Hope, Earle Joseph, Civ. Eng.	Woonsocket.
Keegan, Leslie Arthur, Mech. Eng.	Pascoag.
Kendall, Donald John, Agr.	Brockton, Mass.
Knowles, Ralph Sheridan, Agr.	Providence.
Lahn, Abraham Samuel, Civ. Eng.	Westerly.
Lawrence, Samuel Eugene, Appl. Sci.	New London, Conn.
LeBoeuf, Albert Alphonse, Appl. Sci.	Fall River, Mass.
Lewis, Elsie Ann, Home Econ.	Wickford.
Medbery, Henry Edmund, Appl. Sci.	East Providence.
Munroe, Henry Dodge, Agr.	Campello, Mass.
Murphy, James Aloysius, Chem. Eng.	Woonsocket.
Olsen, Chester Arthur, Elec. Eng.	Providence.
Phelon, William Curtis, Agr.	Westfield, Mass.
Premo, John, Appl. Sci.	Wakefield.
Pyne, Francis James, Civ. Eng.	Brockton, Mass.
Redford, David Adam, Mech. Eng.	Pawtucket.
Rice, Clifford Murdock, Agr.	Brockton, Mass.
Rieckel, Grace Lillian, Home Econ.	Providence.
Rodman, Samuel Lyman, Agr.	Gould.
Silverman, George, Civ. Eng.	Providence.
Slocum, Kenneth Matteson, Civ. Eng.	Central Falls.
Smith, Harold Burlen, Appl. Sci.	Kingston.

Smith, Lester Lawrence, Elec. Eng.	Noank, Conn.
Smoot, Philip, Mech. Eng.	Portsmouth.
Taylor, Raymond Douglas, Agr.	Westerly.
Thayer, Aubrey Harvey, Elec. Eng.	Nasonville.
Tillinghast, Theose Elwin, Mech. Eng.	Westerly.
Welles, Ashbel Russell, Agr.	Wethersfield, Conn.
Williamson, James Hugh, Civ. Eng.	Newport.
Wisbey, Herbert Andrew, Agr.	Rumford.

Freshmen

Armstrong, Philip George, Agr.	Atlanta, Georgia.
Aylesworth, Robert William, Agr.	Foster Centre.
Baldwin, Karl, Eng.	Apponaug.
Barker, Robert Harris, Eng.	West Bridgewater, Mass.
Barton, Henry, Eng.	Bristol.
Bauldry, Carleton Elsworth, Eng.	Fairhaven, Mass.
Belof, Herman, Agr.	Newark, N. J.
Benedict, Edith, Home Econ.	Riverside.
Blake, Nelson Everett, Eng.	Wallingford, Conn.
Brightman, Melvin Hazard, Agr.	Edgewood.
Brown, Albertus Bruce, Eng.	Mystic, Conn.
Brucker, Carl Vincent, Appl. Sci.	Westerly.
Call, Roy Porter, Appl. Sci.	Lynn, Mass.
Cameron, Lorne Atwood, Agr.	Dorchester, Mass.
Carlton, Donald Elsworth, Agr.	East Providence.
Carty, John Chester, Eng.	Providence.
Chace, Marjorie Whiting, Home Econ.	North Attleboro, Mass.
Champlin, Edith Eliza, Home Econ.	Narragansett Pier.
Chandler, Ruth Westlake, Home Econ.	Providence.
Clark, Arthur Lincoln, Appl. Sci.	Kingston.
Clarke, Berton Carpenter, Eng.	East Greenwich.
Clowes, Lloyd Roberts, Eng.	Bristol.
Condon, John Jerome, Eng.	Bristol.
Conway, John Joseph, Appl. Sci.	Providence.
Cook, Paul William, Eng.	Georgiaville.
Coyne, Sarah Elizabeth, Home Econ.	Providence.
Cruikshank, John William, Eng.	Providence.
Cummings, Edward Harold, Eng.	Warwick.
Dalzell, Charles Davies, Agr.	Wakefield, Mass.
Danecker, John Lachlan, Eng.	Edgewood.
Davis, Elwood Redding, Eng.	Old Mystic, Conn.
Davis, Lloyd Warren, Eng.	Providence.
Davis, Walter Brighton, Eng.	Middletown, Conn.
Dawson, William, Eng.	Harrisville.
Devine, James Joseph, Eng.	Bridgewater, Mass.
Dodge, Rowland Sever, Agr.	Pawtucket.
Edmiston, Irma Rathbun, Appl. Sci.	East Greenwich.

Emdur, Louis Arnold, Appl. Sci.	Bar Harbor, Me.
Fairbanks, George Henry, Eng.	Central Falls.
Farnham, Arthur Carleton, Agr.	Providence.
Fearn, George Andrew, Appl. Sci.	Pawtucket.
Fleck, George Howard, Eng.	Providence.
Foley, Francis James, Eng.	Westerly.
Fuller, Marion Pauline, Home Econ.	Groveland, Mass.
Gardner, Harold Adino, Agr.	Phenix.
Gardner, Paul, Eng.	Saunderstown.
Groves, Lester Davis, Agr.	Hope.
Haggarty, Charles William, Eng.	Allenton.
Harnden, George Merchant, Agr.	Lynn, Mass.
Haskell, Dorothy Estelle, Home Econ.	West Barrington.
Hayward, Marchmont, Agr.	Wickford.
Henry, Patrick Charles, Elec. Eng.	Providence.
Hesse, Wilhelmine Louise, Home Econ.	Providence.
Janson, Evan Beaumont, Eng.	Woonsocket.
Jones, Daniel Waldo, Eng.	Brockton, Mass.
Karlson, John Theodore, Civ. Eng.	Orange, Mass.
Kelley, Elisabeth Agnes, Home Econ.	Cranston.
Kelly, Mark Ernest, Eng.	Providence.
Kenney, William Child, Eng.	Auburn.
Kerr, George Harry, Agr.	Lynn, Mass.
Kingman, Edith Beckford, Home Econ.	Providence.
Kinney, Esther Lee, Home Econ.	Kingston.
Lake, Beverley Shibley, Eng.	Providence.
Lermond, Charles Elwyn, Eng.	East Providence.
Lewis, Jackson Berry, Agr.	Roselle Park, N. J.
Lippitt, Alexander Farnum, Eng.	Providence.
Luther, George Edward, Appl. Sci.	Pawtucket.
Lynch, Daniel Joseph, Eng.	Brockton, Mass.
Malloy, George Joseph, Eng.	North Easton, Mass.
Mariani, Valentine Harry, Eng.	Providence.
Martell, Numan Allen, Eng.	North Attleboro, Mass.
Mason, Charles Everett, Agr.	Bristol.
Maxfield, Dorothy Thornton, Home Econ.	Barrington.
Mayer, Albert Rosaire, Eng.	Providence.
Meyer, Arthur Henry Frederick, Eng.	Providence.
Milcke, Alan Wolfram, Eng.	Wallingford, Conn.
Miller, Albert Preston, Eng.	Stonington, Conn.
Miller, Clara Katharine, Home Econ.	Pawtucket.
Mitchell, James Albert, Eng.	Oakland.
Moore, Harold Quentin, Eng.	Westerly.
Murray, Raymond Loyola, Eng.	Providence.
Murray, Ruth Goodwin, Home Econ.	Bristol.
Nichols, Ruhamah Robinson, Home Econ.	Slocum.
Nolan, James, Eng.	Providence.
Ohanian, Pakrad Der, Eng.	Providence.

O'Neil, Michael Joseph, Eng.	Providence.
Pahline, David Lambert, Eng.	East Providence.
Paine, Janet Elizabeth, Home Econ.	Warwick.
Paine, Walter Thomas, Eng.	Warwick.
Pelosi, Anthony Ralph, Eng.	Providence.
Pla, Ramon Alijo, Eng.	San Juan, Porto Rico.
Randall, Abel Martin, Eng.	Westerly.
Randall, Josef Hungerford, Agr.	Westerly.
Riley, Henry Irving, Eng.	North Attleboro, Mass.
Roun, Carl David, Eng.	Hillsgrove.
Slauson, Frederick Charles Thatcher, Eng.	Winsted, Conn.
Small, Kleon Flynt, Eng.	Providence.
Spargo, Raymond Alexander, Eng.	Westerly.
Spencer, William, Eng.	Warwick.
Springer, Franklin Hoxsie, Eng.	Bristol.
Stillman, David Lee, Agr.	Westerly.
Stillman, Hannah Amelia, Home Econ.	Westerly.
Stone, Albert, Appl. Sci.	Meshanticut.
Strand, Henry Richard, Agr.	Brockton, Mass.
Sullivan, John Francis, Appl. Sci.	North Attleboro, Mass.
Sullivan, Webster Bartholomew, Eng.	Fall River, Mass.
Swan, Gladys Marion, Home Econ.	Providence.
Tew, Joseph Gardner, Appl. Sci.	Phenix.
Thatcher, George Atherton, Eng.	Brockton, Mass.
Thayer, Ruth Morrison, Home Econ.	Woonsocket.
Torgan, Milton, Appl. Sci.	East Providence.
Walker, Frederick Earle, Eng.	Arlington.
Walsh, James Russell, Eng.	Fall River, Mass.
Wessels, Howard Cornelius, Eng.	Kingston.
Wild, Arthur, Eng.	Danielson, Conn.
Wilder, Harold Kenneth, Eng.	North Leominster, Mass.
Wood, David Lamson, Eng.	Pawtucket.
Woolf, Peter Jerome, Eng.	Providence.
York, Marion Read, Home Econ.	Pawtucket.

Irregular.

Guernsey, Lucius Warren, Agr.	Bound Brook, N. J.
Travis, Carrie Adelaide, Appl. Sci.	Westerly.

Two-Year Course in Agriculture

Aldred, William.	Ashton.
Angell, Louis White.	Providence.
Baldwin, Miles Edwin.	Providence.
Barclay, William McKay.	Newport.
Bolster, Rolfe Nelson.	Worcester, Mass.
Carberry, Albert Joseph.	Providence.

Crandall, Julian Titsworth	Ashaway.
Dunbar, Alexander	Providence.
Fernandez, John Henry	North Tiverton.
Harris, Leroy Grant	Providence.
Holmes, Oscar Francis	Newport.
McConnell, Elbert Lowene	Brooklyn, N. Y.
Murphy, Orville Duane	Ashaway.
Norman, Edward James	Lee, Mass.
Peckham, Lawrence Stedman	Newport.
Powell, Milford George Woodfield	Fall River, Mass.
Staples, Raymond Bosworth	Foster Centre.
Steacie, Edward	Dorchester, Mass.
Tillinghast, Roy Lincoln	Thornton.
Whitman, Prescott Adams	Providence.
Wiley, John Douglas	Pawtucket.
Winter, George Allen	Greenwood.

Special Poultry Course

Crossland, Harry	Pascoag.
Cunningham, James Potter	Pawtucket.
Gilbert, Stanislas	Woonsocket.
May, Carl Gottlob	Rehoboth, Mass.
Perkins, Harold W	Woonsocket.
Roebuck, Alfred Lewis	Winchendon, Mass.
Salmon, Louis E	New York, N. Y.
Schnitzer, Harold Edward	Newport.
Walsh, Frank E	Fitchburg, Mass.

Summary

Graduates	1
Seniors	29
Juniors	45
Sophomores	60
Freshmen	119
Irregular	2
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	256
Two-Year Course	22
Special Poultry Course	9
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Total	287

Graduates *

1894

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD . . . Kingston.	Agr.	Professor of Agronomy, R. I. S. C.
AMMONDS, GEORGE CLARENCE . . 54 Eliot St., Boston, Mass.	Mech.	Railroad Postal Clerk, on N. Y., N. H. & H. R. R.
ARNOLD, CHAPIN TRAFFORD . . . 52 Wood St., Providence.	Agr.	Electrical Contractor, Office 26 Custom House St., Providence.
BURLINGAME, GEO. WASHINGTON . R. F. D. No. 2, Box 56, North Scituate.	Agr.	Farmer and Teacher.
CLARK, HELEN MAY (Mrs. Wm. F. B. LEAVITT), B. L., Smith Col- lege, 1899. Essex Fells, New Jersey.		At home.
KNOWLES, JOHN FRANKLIN . . . Narragansett Pier.	Mech.	With The Bristow Bros., Knowles Corporation.
†MADISON, WARREN BROWN . . .	Agr.	
MATHEWSON, ERNEST HOXSIE . . Ph. B., Brown University, 1896. Reidsville, North Carolina.	Mech.	Crop Technologist in Tobacco, U. S. Department of Agriculture.
PECKHAM, REUBEN WALLACE . . . Melville Station, Newport.	Agr.	Market Gardener.
RATHBUN, WILLIAM SHERMAN . . 38 Forest St, Willimansett, Mass.	Agr.	Proof-Reader, Eureka Blank Book Co., Holyoke, Mass.
RODMAN, GEORGE ALBERT . . . New Haven, Conn.	Mech.	Général Supervisor, Bridges and Buildings, Union Station, N. Y., N. H. & H. R. R. Co.
SARGENT, CHARLES LAWRENCE . . Ph. D., University of Pennsylvania, 1900. 9 Thomas St., Newark, New Jersey.	Agr.	Superintendent, Color Department, Murphy Varnish Co.
SLOCUM, SAMUEL WATSON . . . 130 West Broad St., Westerly.	Agr.	Carpenter.
SPEARS, JOHN BARDEN . . . Foster Centre.	Agr.	Rural Letter Carrier.

*It is earnestly desired that graduates inform the college office of any permanent change of address.

† Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SWEET, STEPHEN ADELBERT . . . Slocums.	Agr.	Farmer.
TUCKER, GEORGE MASON . . . Ph. D. Göttingen, 1899. R. F. D. No. 8, Box 94 P, Washington, D. C.	Agr.	Editorial Staff, Experiment Station Record, U. S. Department of Agriculture.
WILBUR, ROBERT ARTHUR . . . East Greenwich.	Mech.	Carriage-maker and blacksmith.

1895

*ALBRO, LESTER FRANKLIN . . .	Agr.	
BURDICK, HOWLAND . . . Kingston.	Agr.	Assistant Professor of Dairying, R. I. S. C.
CLARKE, CHARLES SHERMAN . . . Jamestown.	Mech.	Marine Engineer.
ELDRED, MABEL DEWITT . . . Kingston.		Instructor in Drawing, R. I. S. C.
HAMMOND, JOHN EDWARD . . . Jamestown.	Agr.	Farmer.
OATLEY, LINCOLN NATHAN . . . Wakefield.	Mech.	Contractor and builder; Coal Dealer.
SCOTT, ARTHUR CURTIS . . . Ph. D., Univ. of Wisconsin, 1902. Dallas, Texas.	Mech.	President, Scott Engineering Co., 632 Wilson Building.
TEFFT, JESSE COTTRELL . . . Jamestown.	Mech.	Purser, Newport and Jamestown Ferryboat Co.
WINSOR, BYRON EDGAR . . . Coventry.	Mech.	Poultryman.

1896

BROWN, MAY (MRS. CHARLES A. WHITE). Narragansett Pier.		At home.
GREENMAN, ADELAIDE MARIA (MRS. R. WALLACE PECKHAM) . . . Melville Station, Newport.		At home.
KENYON, ALBERT LEWIS . . . 35 Chestnut St., South Manchester, Conn.	Mech.	Capitalist.
MOORE, NATHAN LEWIS CASS . . . Venice, Florida.	Agr.	Fruit-Grower, citron culture.
TABOR, EDGAR FRANCIS . . . 39 Everett St., Southbridge, Mass.	Mech.	Foreman Printer, The Southbridge Printing Co.
*WILLIAMS, JAMES EMERSON . . .	Agr.	

1897

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS . Shannock.	Sci.	Bookkeeper, Providence Journal Co., Providence
CASE, HERBERT EDWARDS BROWN . Ph. B., Brown University, 1900. Graduate, Hartford Theological Seminary, 1904. 14 Beacon St., Boston, Mass.	Mech.	Assistant, Foreign Department, Amer. Board of Commissioners for Foreign Missions.
GRINNELL, ARCHIE FRANKLIN . R. F. D. No. 1, East Norton, Mass.	Mech.	Farmer.
HANSON, GERTRUDE MAIE . . Westerly.	Sci.	Teacher.
HOXSIE, BESSIE BAILEY (Mrs. E. F. RUECKERT) . . 98 Melrose St., Providence.	Sci.	At home.
KENYON, ALBERT PRENTICE . . 23 Courtland St., Westerly.	Mech.	Bookkeeper, Maxson & Co., Westerly.
KENYON, CHARLES FRANKLIN . Shannock.	Mech.	Engineer, White Bros., White Valley, Mass.
LARKIN, JESSIE LOUISE . . . 98 Beach St., Westerly.	Sci.	Genealogist.
*MARSLAND, LOUIS HERBERT . .	Mech.	
TEFFT, ELIZA ALICE	Sci.	Teacher, East Greenwich. 1 Stanton St., Westerly.
THOMAS, IRVING	Mech.	Designer of Patterns. Slocums.

1898

ARNOLD, SARAH ESTELLE (Mrs. R. O. BROOKS)	Sci.	At home. 975 East 18th St., Brooklyn, N. Y.
BARBER, GEORGE WASHINGTON . Glendora, Cal.	Agr.	Rancher.
CARGILL, EDNA MARIA (Mrs. LESTER H. BROWN) . . 4 Highland Ave., Lonsdale.	Sci.	At home.
CASE, JOHN PETER	Agr.	Mgr., Western Office, Brown Hoisting Machinery Company. 251 Monadnock Bldg., San Francisco, Cal.
CLARK, WILLIAM CASE	Sci.	General Manager, Narragansett Pier Elec. Light and Power Co.; Mgr., Wickford Light and Water Co.; Div. Supt., Rhode Island Co. Wakefield.
CONGDON, HENRY AUGUSTUS . . Kingston.	Mech.	Farmer.

*Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FLAGG, MARTHA REBECCA . . . Abbott Run.	Sci.	At home.
HARLEY, WILLIAM FERGUSON . 62 Hillside Ave., Providence.	Agr.	Buyer, with Messrs. Callender, McAuslan & Troup, Providence.
TURNER, HARRIETTE FLORENCE (MRS. GEO. M. TUCKER) . . . Graduate, Drexel Institute, 1900. R. F. D., Washington, D. C.	Sci.	At home.
WILSON, GRACE ELLEN (MRS. W. F. HARLEY) . . . 62 Hillside Ave., Providence.	Sci.	At home.

1899

BOSWORTH, ALFRED WILLSON . . A. M., Harvard University, 1913, Geneva, N. Y.	Sci.	Associate Chemist, Agr. Experiment Station, Biological Chemist, Bos- ton Floating Hospital.
BROOKS, RALPH ORDWAY . . . 975 East 18th St., Brooklyn, N. Y.	Sci.	Consulting Chemist, Bacteriolo- gist, Microscopist, Food-Inspection Expert, 191 Franklin St., New York City.
GEORGE, LILLIAN MABELLE . . . A. B., Univ. Illinois, 1904. Graduate, N. Y. State Library School, 140 North Twenty-fifth St., Corvallis, Ore.	Sci.	Cataloguer, Oregon Agricultural College Library.
HARVEY, MILDRED WAYNE (MRS. WM. H. BLISS) . . . 407 W. 123rd St., New York City.	Sci.	At home.
KENYON, BLYDON ELLERY . . . 632 Wilson Bldg., Dallas, Texas.	Agr.	Consulting Engineer.
KNOWLES, CARROLL 77 Chiswick Road, Edgewood.	Mech.	Assistant Chief Draftsman, Brown & Sharpe Mfg. Co.
KNOWLES, HARRY Ph. B., Brown University, 1906. 253 Lafayette Ave., Brooklyn, N. Y.	Sci.	Reporter.
LADD, MERRILL AUGUSTUS . . . Jacksonville, Fla.	Mech.	Sales Manager, Florida Electric Co.
MORRISON, CLIFFORD BREWSTER . New Haven, Conn.	Sci.	Assistant Chemist, Conn. State Experiment Station.
OWEN, WILLIAM FRAZIER . . . Schenectady, N. Y.	Mech.	Engineering Department, General Electric Co.
PAYNE, EBENEZER M. D., Univ. Michigan, 1904. Glendora, Cal.	Sci.	Orange Grower.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
PHILLIPS, WALTER CLARKE . . Ph. B., Brown University, 1902. A. M., Brown University, 1903. Providence.	Mech.	Instructor in English, Brown University.
REYNOLDS, ROBERT SPINK . . Room 314, Gen. Office Bldg., New Haven, Conn.	Mech.	Assistant Engineer, Bridge Dept., N. Y., N. H. & H. R. R. Co.
RICE, MINNIE ELIZABETH (MRS. ROBERT J. SHERMAN) . . Exeter Hill.	Sci.	At home.
SHERMAN, ABBIE GERTRUDE (MRS. BENJAMIN BARTON) . . 56 Pavilion Ave., Providence.	Sci.	At home.
*SHERMAN, GEORGE ALBERT . .	Mech.	
THOMPSON, SALLY RODMAN (MRS. LEWIS BALCH, JR.) . . Wakefield.	Sci.	At home.

1900.

BRIGHTMAN, HENRY MAXSON . . 50 Church St., New York City.	Mech.	Drying Expert, with B. F. Sturtevant Co.
CROSS, CHARLES CLARK . . .	Mech.	Factory Manager, Saxon Motor Co.
ELDRED, JOHN RALEIGH . . . Kingston.	Mech.	Instructor in Mechanical Engineering, R. I. S. C.
FISON, GERTRUDE SARAH (MRS. JOHN W. ROOT) . . . 139 Fresh Pond Parkway, Cambridge, Mass.	Sci.	At home.
FRY, JOHN JOSEPH Portchester, N. Y.	Sci.	Principal, Byram School.
GODDARD, EDITH (MRS. LAWRENCE B. REED) . . 20 North St., Plymouth, Mass.	Sci.	At home.
KENYON, AMOS LANGWORTHY . . Wood River Junction.	Agr.	Dairyman.
MUNRO, ARTHUR EARLE . . . Ph. B., Brown University, 1902. 41 George St., Providence.	Sci.	Attorney-at-Law, 49 Westminster St.
SOULE, RALPH NELSON 384 Montclair Ave., Detroit, Mich.	Sci.	Asst. Mgr., Service Dept., Chalmers Motor Co.
STEERE, ANTHONY ENOCH . . . 3 Mark Bldg., Amsterdam, N. Y.	Mech.	Resident Civil Engineer, Mohawk River Division.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
STILLMAN, LENORA ESTELLE . . . 1046 Greene Ave., Brooklyn, N. Y.	Sci.	Teacher.
TUCKER, BERTHA DOUGLASS . . . R. F. D. No. 2, Box 105, Swansea, Mass.	Sci.	Dressmaker.
WHEELER, CHARLES NOYES . . . 97 Garden St., Pawtucket.	Sci.	Clerk, Wm. H. Haskell Manufacturing Co.
WILSON, JOSEPH ROBERT . . . Allenton.	Mech.	Surveyor.

1901

BRAYTON, CHARLES ANDREW . . . Hope, R. F. D.	Agr.	Farmer.
BRIGGS, NELLIE ALBERTINE . . . Providence.	Sci.	Stenographer, R. I. Hospital Trust Co.
BURGESS, CHARLES STUART . . . 264 Sayles St., Providence.	Mech.	Draughtsman, Brown & Sharpe Mfg. Co.
CLARNER, LOUIS GEORGE KARL, JR. 68 Granite Ave., Dorchester, Mass.	Sci.	Insurance Engineer, N. E. Bureau of United Inspection.
DAWLEY, EDNA ETHEL . . . (Mrs. GEORGE W. WHITFORD) West Kingston, R. F. D., Box 80.	Sci.	At home.
DENICO, ARTHUR ALBERTUS . . . Ph. B., Brown Univ., 1904. 521 West 185th St., New York City.	Sci.	Traffic Engineer, with American Telephone and Telegraph Co.
*JAMES, RUTH HORTENSE (Mrs. HERBERT E. ROUSE) . . .	Sci.	
SHERMAN, ANNA BROWN . . . 845 Elmwood Ave., Providence.	Sci.	Publisher.
SHERMAN, ELIZABETH AGNES . . . 424 Mass. Ave., Boston, Mass.	Sci.	Secretary to Research Chemist, Arthur D. Little, Inc., Boston.
SMITH, HOWARD DEXTER . . . A. M., Brown University, 1904. Ph. D., Tufts College, 1906. 30 Hawthorne St., Lowell, Mass.	Sci.	Instructor in Chemistry, Lowell Textile School.
STEEERE, ROWENA HOXSIE . . . 102 Sassafrafs St., Providence.	Sci.	Stenographer.
WILBY, JOHN Flat River, Missouri.	Sci.	Supply Clerk, Central Lead Co.

1902

CLARKE, LATHAM A. M., Brown University, 1903. Ph. D., Harvard University, 1905. Montevideo, Uruguay.	Chem.	Director, Instituto de Quimica Industrial.
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NAME AND ADDRESS.	COURSE.	OCCUPATION.
FERRY, OLIVER NEEDHAM . . . 30 Stuart St., New Britain, Conn.	Mech.	In charge of Production Dept. Maxwell-Briscoe Motor Co.
MAXSON, RALPH NELSON . . . Ph. D., Yale University, 1905. 366 Transylvania Park, Lexington, Ky.	Chem.	Professor Inorganic Chemistry, State University.
PITKIN, ROBERT WILLIAM . . . Rockville, Conn., R. F. D. No. 1.	Mech.	Farmer.

1903

BARBER, KATE GRACE (MRS. A. L. WINTON) . . . Ph. D., Yale University, 1906. 1322 Vermont Ave., Washington, D. C.	Gen. Sci.	Investigations in Vegetable Histo- logy.
CONANT, WALTER AIKEN . . . Temple, N. H.	Agr.	Dairying, The Conant and Clem- ent Farms, Hillsboro County.
GODDARD, WARREN, JR. . . . Graduate, New Church Theo- logical School, 1907. 905 Linwood Ave., La Porte, Indiana.	Mech.	Pastor, New Church.
KEEFER, EDITH CECILIA . . . 609 West 127th St., N. Y. City.	Biol.	Teacher of Mathematics, Miss Spence's School.
KENT, RAYMOND WARREN . . . A. M., Harvard University, 1904. 171 Dodge Ave., Akron, Ohio.	Chem.	Chemist, The Sweinhart Tire and Rubber Co.
TEFFT, ERNEST ALLEN . . . 85 Larch St., Providence.	El. Eng.	Electrical Contractor, 87 West- minster St.

1904

BALLOU, WILLARD ALGER . . . B. S., Columbia Univ., 1913. 335 Lafayette Ave., Brooklyn, N. Y.	Biol.	Instructor in Mathematics, Pratt Institute.
QUINN, MARY LOUISE . . . 38 N. Allegany St., Cumberland, Md.	Biol.	Teacher of Science, Allegany Co. High School.
RODMAN, WALTER SHELDON . . . M. S., R. I. C. A. & M. A., 1907. M. S., Mass. Inst. Tech., 1909. 1201 W. Main St., University, Va.	El. Eng.	Professor of Electrical Engineering, University of Virginia.

1905

CHAMPLIN, SARAH ELIZABETH . . . 63 Carolina Ave., Providence.	Gen. Sci.	Bookkeeper, Burt Mfg. Co., 226 Eddy St.
--	-----------	--

NAME AND ADDRESS.	COURSE.	OCCUPATION.
DOW, VICTOR WELLS . . . 6 Tyler St., Hampton, Va.	High. Eng.	Draftsman, Hampton Institute.
GILMAN, JEAN	High. Eng.	Assistant to Director of Trade School, Hampton Institute.
HARRALL, NELLIE ARMSTRONG. (MRS. B. H. ARNOLD) . . .	Gen. Sci.	At home.
Graduate, Sargent School of Physical Education, 1909. 555 West 10th St., Erie, Pa.		

1906.

ARNOLD, BENJAMIN HOWARD . .	El. Eng.	Supervisor of Tests, Erie Works, General Electric Co.
555 West 10th St., Erie, Pa.		
BERRY, WALLACE NOYES . . .	El. Eng.	With Albuquerque Gas, Electric Light and Power Co.
Albuquerque, New Mexico.		
ELKINS, MARION GRAHAM . . .	Gen. Sci.	Instructor in Biology, Randolph- Macon Woman's College.
Ph. D., Yale University, 1912. College Park, Virginia.		
HARDING, LEE LAPLACE . . .	High. Eng.	Instructor in Mathematics, Fitch- burg High School.
63 Brigham Park, Fitchburg, Mass.		
KEYES, FREDERICK GEORGE . . .	Chem.	Chemist.
Sc. M., Brown Univ., 1907. Ph. D., Brown Univ., 1909. 42 Carnegie Ave., East Orange, N. J.		
NICHOLS, HOWARD MARTIN . .	El. Eng.	Engineer, B. F. Sturtevant Co.
Readville, Mass.		
SISSON, CORA EDNA	Gen. Sci.	Instructor in Biology, Ulster Academy.
M. S., Brown Univ., 1910. 164 Washington St., Kingston, N. Y.		
WILKINSON, ALBERT EDMUND . .	Agr.	Extension Instructor in Vegetable Gardening, Cornell University.
309 Stewart Ave., Ithaca, N. Y.		

1907.

BARBER, ARTHUR HOUGHTON	Mech. Eng.	Inspector for Associated Factory Mutual Fire Insurance Cos., Boston, Mass.
East Greenwich.		
COGGINS, CALVIN LESTER . . .	El. Eng.	Assistant Professor of Physics and Elec. Eng., R. I. S. C.
Kingston.		
FERRY, JAY RUSSELL	High. Eng.	Draftsman, American Bridge Co.
677 Rutherford Ave., Trenton, N. J.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
KELLOGG, DAVID RAYMOND . . Ph. D., Ohio State University, 1912. 506 Custom House, San Francisco, Cal.	Chem.	Asst. Physical Chemist, Bureau of Mines.
KENDRICK, WINFIELD SMITH . . 231 Parkwood Boulevard, Schenectady, N. Y.	El. Eng.	Specialist, General Electric Co.
LAMOND, JOHN KENYON . . . M. A., Yale Univ., 1908. Ph. D., Yale Univ., 1910. 38 Brainerd Ave., Middletown, Conn.	El. Eng.	Instructor in Mathematics, Wes- leyan University.
LEWIS, HARRY REYNOLDS . . . 17 Jones Ave., New Brunswick, N. J.	Agr.	Professor, Dairying and Poultry Husbandry, Rutgers College.
MACOMBER, MINER SANFORD . . Oconomowoc, Wisconsin.	Chem.	Chemist, with Pacific Coast Con- densed Milk Co.
TUCKER, ETHEL ALDRICH (MRS. LITTLETON C. HAYDEN) 760 Tyler St., Pittsfield, Mass.	Gen. Sci.	At home.

1908

DREW, JOSEPH DRAKE . . . 2010 Avenue H, Ensley, Alabama.	Chem.	Chemist, Tenn. Coal, Iron & R. R. Co.
FIELD, CLESSON HERBERT . . . C. E., Lehigh Univ., 1909. 223 Loring Ave., Buffalo, N. Y.	Civ. Eng.	Head of Dept. Structural Design, Buffalo Technical High School.
FISKE, HERBERT ANDREW . . . 59 Mt. Pleasant St., New Bedford, Mass.	El. Eng.	Electrician for Beacon Mfg. Co.
GARDINER, ROBERT FRANKLIN . . M. S., George Washington University, 1914. 1223 Irving St., Washington, D. C.	Chem.	Asst. Chemist, Bureau of Soils, U. S. Dept. of Agriculture.
GORY, EDWARD ALLEN . . . 8 Sunset St., Roxbury, Mass.	El. Eng.	Electrical Repair Work.
KENYON, SUSAN ELNORA (MRS. FRED K. CRANDALL) . . . Westerly.	Biol.	At home.
MITCHELL, CLOVIS WILLIAM . . 36 Franklin St., New London, Conn.	Civ. Eng.	Teacher, Mathematics and Sci- ence, Manual Training High School.
ROSE, ORPHA LILLIE (MRS. HENRY A. CONGDON) Kingston.	Gen. Sci.	Teacher.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SHELDON, GEORGE WARE . . 58 James St., Newark, N. J.	El. Eng.	With Westinghouse Electric Mfg. Co.
SHERMAN, MARY ALBRO . . .	Agr.	Teacher.
West Kingston.		
SMITH, JOHN LEBROC . . .	El. Eng.	Head of Science Dept., Cranston High School.
148 Magnolia St., Auburn.		
WHIPPLE, LUCIUS ALBERT . .	Civ. Eng.	Superintendent of Schools, Town of Lincoln.
19 Walker Ave., Saylesville.		

1909

CARGILL, RHOBIE LUCELIA . .	Appl. Sci.	Teacher of Mathematics, Technical High School.
183 Pearl St., Providence.		
CRAIG, JAMES MCINTYRE . . .	Agr.	Gardener.
Arsenida de Mayo, 605 Buenos Aires, Argentine.		
CRANDALL, FRED KENYON . . .	Agr.	Farmer.
Westerly.		
FRENCH, HENRY FRANK . . .	El. Eng.	Turbo-Generator Engineer, General Electric Co.
9 Anoka Place, Lynn, Mass.		
HOWE, ALBERT MENDEL . . .	El. Eng.	Assistant General Foreman, Repair Dept., Bay State St. Ry. Co.
1 Millett St. Campello, Mass.		
KNOWLES, WALTER . . .	Civ. Eng.	Construction Dept., N. Y., N. H. & H. R. R. Co.
186 Broadway, Providence.		
LEE, ALFRED ROGERS . . .	Agr.	Animal Husbandman, in Poultry Investigations, Bureau of Animal Industry, U. S. Dept. of Agri- culture.
2513 N. Capitol St., Washington, D. C.		
MORAN, WALTER JOHN . . .	Civ. Eng.	Civil Engineer, N. Y., N. H. & H. R. R. Co.
394 Broad St., New London, Conn.		
MOYER, LOUIS EARL . . .	Civ. Eng.	Civil Engineer, Dept. State Engi- neer, Barge Canal Office.
Seneca Falls, N. Y.		
ROCKWELL, RUBY BELLE . . .	Chem.	At home.
Troy, Pa.		
SMITH, ELMER FRANCIS . . .	El. Eng.	Principal, Roselle Park High School.
311 Chestnut St., Roselle Park, N. J.		
TISDALE, HARRY ROBERT . . .	Chem.	Chemist and Asst. Foreman, Brain- erd & Armstrong, Silk M'f'rs.
Mass. Inst. Technology, 1911. 360 Broad St., New London, Conn.		
TUCKER, ELLEN CAPRON . . .	Gen. Sci.	At home.
Kingston.		

1910

BURGESS, PAUL STEERE . . .	Chem. Eng.	Asst. Professor of Soil Bacteriology and Chemistry, University of California.
M. S., University of Illinois, 1911. 2236 Durant Ave., Berkeley, Cal.		

NAME AND ADDRESS.

COURSE.

OCCUPATION.

CARPENTER, RANDOLPH HAYWOOD	El. Eng.	Sales Engineer, Westinghouse Electric & Mfg. Co., 165 Broadway.
3015 Farragut Road, Brooklyn, N. Y.		
CUMMINGS, ROBERT WINTHROP	Mech. Eng.	Efficiency Bureau, Yale & Towne Mfg. Co.
9 Cottage St., Stamford, Conn.		
GOODALE, RALPH WALDO	Civ. Eng.	Transitman in Real Estate Dept., N. Y., N. H. & H. R. R. Co.
921 Howard Ave., New Haven, Conn.		
HARDY, JOHN IRA	Gen. Sci.	Asst. Chemist in Soil Investigation, University of Tennessee.
M. S., University of Tennessee, 1914. Knoxville, Tenn.		
HEATH, BERTHA MAY	Agr.	Teacher, Kingston.
Lunenburg, Mass.		
KENYON, AMOS HARRIS	El. Eng.	Asst. Traffic Chief, American Tel. & Tel. Co.
1021 East 14th St., Brooklyn, N. Y.		
LAMOND, HELEN SCOTT	Gen. Sci.	At home.
(Mrs. R. H. Carpenter) 3015 Farragut Road, Brooklyn, N. Y.		
MOUNCE, LEROY LEIDMAN	Agr.	Foreman, Upwey Farms, Woodstock, Vt.
South Woodstock, Vt.		
PEABODY, GEORGE ABBOTT	El. Eng.	In Electrical Construction Dept., General Electric Co.
Schenectady, N. Y.		
SHERMAN, JOHN LELAND	Agr.	County Agent, U. S. Dept. of Agriculture.
Manchester Center, Vt.		
SMITH, HIRAM JAMESON	Civ. Eng.	Resident Eng. Const., Southern New England Railroad.
Palmer, Mass.		
WAGNER, ALBERT FREDERIC	El. Eng.	Instructor in Physics, Purdue University.
M. S., Purdue Univ., 1913. 427 Russell St., Lafayette, Indiana.		
WHEELER, RICHARD HOWES	El. Eng.	Asst. Electrical Engineer, Canadian Northern Railway.
411 Dorchester St., West, Montreal, Canada.		
WORRALL, DAVID ELBRIDGE	Chem.	Instructor in Chemistry, Smith College.
M. A., Harvard Univ., 1911. 24 Belmont Ave., Northampton, Mass.		

1911

ANDREWS, CARMEN NICHOLS	Appl. Sci.	Teacher.
Slocums.		
ANGILLY, CHARLES ENOCH, JR.	Civ. Eng.	
108 Houston St., Providence.		
EASTERBROOKS, HAROLD ARNOLD	Biol.	In business.
280 Benefit St., Providence.		
EASTERBROOKS, LOUIS CHURCH	Agr.	In business.
280 Benefit St., Providence.		
GILCHREST, CLYDE RONALD	Elec. Eng.	Sales Dept., Westinghouse Electric and Manufacturing Co.
1172 South Ave., Wilkesburg, Pa.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HARRIS, BURTON KENNETH . R. F. D., Saylesville.	Chem. Eng.	Lime Manufacturer and Chemist.
HEALY, PATRICK JOSEPH . . . Newport.	Agr.	Gardener, Mahwah, N. J.
KENT, ROBERT WILLARD . . 47 Miller St., Pawtucket.	Mech. Eng.	Industrial Engineer, Glenlyon Dye Works, Saylesville.
MINOR, ARTHUR JACOB . . Boston, Mass.	Civ. Eng.	Asst. Engineer, Valuation Dept., Boston & Maine R. R.
NEAL, WILLIAM THOMAS . . . Walton, New York.	Agr.	Proprietor of Tripp Floral Co.
ROBINSON, BENJAMIN ROWLAND Box 351, Massena, N. Y.	Mech. Eng.	Engineering Dept., Aluminum Co. of America.
RUPRECHT, RUDOLF WILLIAM . M. S., Mass. Agr. College, 1914. 32 N. Prospect St., Amherst, Mass.	Appl. Sci.	Asst. Research Chemist, Agr. Ex- periment Station.
SAFFORD, HOWARD ALBERT . . . National Soldiers' Home, Maine.	Agr.	Chief Gardener.
TUCKER, HARRIET TABER . . (MRS. DAVID A. WORRALL) 24 Belmont Ave., Northampton, Mass.	Gen. Sci.	At home.
WADE, CEYLON RAYMOND . . Bridgeton.	Civ. Eng.	With Interstate Commerce Com- mission, Division of Valuation.

1912

BARLOW, HENRY NEWELL . . Sharon, Conn.	Elec. Eng.	Dairy Farmer.
BIGELOW, CARLE MUZZY . . 25 Walker Ave., Saylesville.	Appl. Sci.	Division Supt., Glenlyon Dye Works.
CALDWELL, DOROTHY WALCOTT, M. S., R. I. S. C., 1914. Kingston.	Civ. Eng.	Assistant in Bacteriology, Experi- ment Station, R. I. S. C.
CLARKE, PHILIP HARRISON . . 831 Lincoln Ave., Schenectady, N. Y.	Elec. Eng.	Industrial Control Engineer, Gen- eral Electric Co.
COBB, ELECTRA HENRIETTA (MRS. JOHN L. SHERMAN) Manchester Centre, Vt.	Home Econ.	At home.
DOLL, WALTER R. R. No. 3, Fairfield, Penn.	Mech. Eng.	Plant Superintendent, Advance In- dustrial Supply Co.
HENDERSON, ETHEL PIERCE (MRS. E. K. WILCOX) 80 Williams St., New London, Conn.	Appl. Sci.	At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
KENYON, ANNIE ELIZA (MRS. S. C. WEBSTER, JR.) 1877 Hyde Park Ave., Readville, Mass.	Appl. Sci.	At home.
LARKIN, CHARLES HERBERT . 23 Linden St., Winchendon, Mass.	Civ. Eng.	With The Northeastern Co.
NUTTING, BERTHA MAY . 206 Yates Ave., Grafton, West Va.	Home Econ.	Teacher, Domestic Science, Grafton High School.
PATTERSON, ARTHUR JACOB . 123 Chestnut St., Rochester, N. Y.	Elec. Eng.	Construction Engineer, General Railway Signal Co.
RICHMOND, FRED ALLEN . 832 Lincoln Ave., Schenectady, N. Y.	Elec. Eng.	Electrical Test Engineer, General Electric Co.
SHERMAN, GEORGE WILLIAM, JR. M. S., Purdue University, 1914. 116 Sheitz St., West Lafayette, Ind.	Elec. Eng.	Assistant in Physics, Purdue Uni- versity.
SLATER, ALLAE CORDELIA (MRS. ARTHUR J. MINOR) . Boston, Mass.	Home Econ.	At home.
WARNER, DAVID EDMOND, JR. . . Storrs, Conn.	Agr.	Instructor in Poultry Husbandry, Connecticut Agricultural College.
WEBSTER, SAMUEL C., JR. . . 1877 Hyde Park Ave., Readville, Mass.	Agr.	Agriculturist Service Bureau, Amer. Agr. Chemical Co., Boston, Mass.
WHALEN, WILLIAM JOSEPH . Kingston.	Appl. Sci.	Asst., Buildings Dept., R. I. S. C.

1913

ALEXANDER, RALPH IRWIN . 357 West Market St., York, Pa.	Mech. Eng.	Engineering Apprentice, Erecting Dept., York Mfg. Co.
BATES, REUBEN CHARLES . . 384 Potter Ave., Providence.	Civ. Eng.	Graduate Student, Brown Univer- sity.
BRETT, CLARENCE ELMER . . New Brunswick, N. J.	Agr.	Instructor in Poultry Department, Rutgers College.
BRIDEN, FRANK HAROLD . . 177 Cross St., Central Falls.	Mech. Eng.	Experimental Work, with Nicholson File Co., Providence.
COHEN, BENJAMIN 423 Rebecca Ave., Wilkinsburg, Pa.	Elec. Eng.	Works Management, Westinghouse Electric & Mfg. Co.
CONGDON, ESTHER LOOMIS (MRS. ARTHUR L. REYNOLDS) . Wakefield.	Home Econ.	At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CORR, JOHN WILLIAM . . . East Greenwich.	Appl. Sci.	Assistant Superintendent, Green- wich Bleachery.
ELKINS, DOROTHY DEARBORN 10 Moody St., Amesbury, Mass.	Home Econ.	At home.
ELKINS, MARGUERITE WHITE M. S., R. I. S. C., 1914. Kingston.	Home. Econ.	Assistant in Biology, Agricultural Experiment Station.
HART, CRAWFORD PECKHAM . . Manville.	Agr.	Superintendent of Junior Farm.
IRONS, WALTER COLWELL . . . Kingston.	Agr.	Assistant in Agronomy, Agricul- tural Experiment Station.
KYLE, THOMAS Corozal, Canal Zone.	Agr.	Plumber, Mech. Division, Panama Canal.
MITCHELL, IRVING CALVARY . Charlestown, N. H.	Appl. Sci.	Principal, Charlestown High School.
REDDING, WILLIAM FRANCIS Caminio Nerevo, Mayaguez, Porto Rico.	Elec. Eng.	Instructor, Mech. Eng., University of Porto Rico.
REINER, WALDO 45 Strong Place, Brooklyn, N. Y.	Civ. Eng.	Graduate Student, Harvard Uni- versity.
REYNOLDS, ARTHUR LESLIE . Wakefield.	Elec. Eng.	Graduate Student, Brown Uni- versity.
SLOCUM, GEORGE EDWIN . . 423 Rebecca Ave., Wilkinsburg, Pa.	Elec. Eng.	Engineer, Westinghouse Electric & Mfg. Co.
STECK, FRANK Baguio Beuguet, P. I.	Chem. Eng.	Third Lieutenant Philippine Con- stabulary.
TURNER, WALTER RAYMOND . 21 Cedar St., Pawtucket.	Appl. Sci.	Efficiency Engineer, Glenlyon Dye Works.
WILCOX, ERROLL KENYON . . 80 Williams St., New London, Conn.	Civ. Eng.	Instructor in Mathematics, Manual Training High School.
WOOD, SUSIE STANTON . . 86 Clark St., Belmont, Mass.	Home Econ.	Teacher, Domestic Science, High School.
YOUNG, JAMES HANNIBAL . . 160 Broad St., Providence.	Appl. Sci.	With Baker, Ayling & Co., Invest- ment Bankers, Providence.

1914

ALDRED, JAMES HILTON . . Ashton.	Mech. Eng.	In Scientific Management Dept., Glenlyon Dye Works, Saylesville.
ANDERSON, WILLIAM EDWARD . . . 2932 Clinton St., Lincoln, Nebraska.	Agr.	Bacteriology, Experiment Station.
ASPINWALL, FREDERICK OTTO 631 Main St., Pawtucket.	Chem. Eng.	Teaching Assistant Chemistry, Tufts College, Mass.

NAME AND ADDRESS.	COURSE.	OCCUPATION
BAXTER, FRANK HOWARD . Y. M. C. A., 215 West 23rd St., New York City, N. Y.	Mech. Eng.	With A. Wimpsheimer & Bro., Fourth Ave., New York City.
BENSON, ROBERT JOHN . . . Schenectady, N. Y.	Elec. Eng.	With General Electric Co.
BOULESTER, EDWARD JAMES 617 Academy Ave., Providence.	Appl. Sci.	Chemist, Charles S. Tanner Co.
BROWNING, HAROLD WILLIAM Biology Building, Univ. of Wis- consin, Madison, Wisconsin.	Appl. Sci.	Assistant in Botany, University of Wisconsin.
CONNOR, THOMAS ROWLEY . . Peacedale.	Civ. Eng.	Civil Engineer, with W. Kent.
DAVIS, HENRY ELLIS . . . Howard.	Agr.	Military Instructor, Sockanosset School.
ESTY, JAMES RUSSELL . . . 171 Power St., Providence.	Chem. Eng.	Graduate Student, Brown Univer- sity.
FINCH, MYRON WHITMARSH . . 27 Whitmarsh St., Providence.	Agr.	In Greenhouse.
FORD, HELEN WHEELER . . . New Ipswich, N. H.	Home Econ.	Teacher of Domestic Science, Appleton Academy.
HAWKINS, MYRON ANGELL . . . Kingston.	Agr.	Demonstrator in Agronomy, Ex- tension Service, R. I. S. C.
JONES, CARLTON WALTER . . . 65 Laura St., Providence.	Civ. Eng.	Computer and Draftsman, Sewage and Water Works Dept., City Engineer's Office.
KARMANN, HERMAN HARRY . . 160 Dudley St., Providence.	Civ. Eng.	Surveyor, City Engineer's Office.
KINNEY, LORENZO FOSTER . . 710 Langdon St., Madison, Wisconsin.	Appl. Sci.	Graduate Student, Economics, University of Wisconsin.
REINER, FRIEDA 45 Strong Place, Brooklyn, N. Y.	Home Econ.	Assistant, Home Economics Dept., New Hampshire State College.
REINER, HERBERT 45 Strong Place, Brooklyn, N. Y.	Agr.	In Truck-Gardening, with Sea- brook Farms Co., Bridgeton, N. J.
ROSSI, LOUIS 139 Tower St., Westerly.	Civ. Eng.	Civil Engineer and Draftsman.
SAFFORD, EDITH MARIE . . . Lancaster, Mass.	Home Econ.	At home.
SULLIVAN, JOHN LEO Hoosac Tunnel, Mass.	Mech. Eng.	Electrical Engineer.
TULLY, WILLIAM HENRY . . . Kingston.	Appl. Sci.	In Poultry Dept., R. I. S. C.
TURNER, HARVEY ROBERT . . 137 East Manning St., Providence.	Civ. Eng.	

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WEBB, WILLIAM HARRY . . 423 Rebecca Ave., Wilksburg, Pa.	Elec. Eng.	Apprentice, Westinghouse Elec. & Mfg. Co.
WEBSTER, EARL CLIFTON . . Cornwall, Conn.	Civ. Eng.	Instructor in Mathematics, Rum- sey Hall.

Advanced Degrees

MASTER OF SCIENCE

1907

RODMAN, WALTER SHELDON (B. S., R. I. State College, 1904). University, Va.	Associate Professor of Electrical Engineering, University of Vir- ginia.
--	--

1910

WHITING, ALBERT LEMUEL (B. S., Mass. Agr. College, 1908). Ph. D., University of Illinois, 1912. 504 East Chalmers St., Champaign, Illinois.	Associate in Soil Biology; and First Asst. in Soil Biology in Experiment Station, University of Illinois.
---	--

1911

HAMMETT, FREDERICK SIMONS (A. B., Tufts College, 1908). Cambridge, Mass.	Graduate Student, Harvard Uni- versity.
--	--

1914

CALDWELL, DOROTHY WOLCOTT (B. S., R. I. State College, 1912). Kingston.	Asst. in Bacteriology, Experiment Station, R. I. S. C.
ELKINS, MARGUERITE WHITE (B. S., R. I. State College, 1913). Kingston.	Asst. in Bacteriology, Experiment Station, R. I. S. C.

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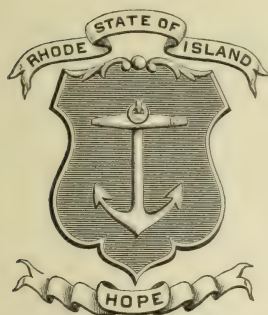
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FOR MAY, 1916

CATALOG OF THE COLLEGE



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1916

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MAY 17 1916

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*In coöperation with United States Department of Agriculture.

College Calendar.

Monday, September 18, 1916,

Examination of Entering and Conditioned Students... 9 A. M.

Tuesday, September 19.....Registration.....9 A. M.

Wednesday, September 20.....Recitations begin, 8:10 A. M.

Thursday, October 12, holiday.....Columbus Day.

Monday, October 16.....Registration of Short-Course Agricultural Students.

Tuesday, November 7.....Election Day.

Wednesday, November 29, 12 M.

Monday, December 4, 8:10 A. M. }Thanksgiving Recess.

Saturday, December 16, 12 M.

Tuesday, January 2, 1917, 1 P. M. }Christmas Recess.

Tuesday, January 2, 1917.....Registration for Special Poultry Course.

Monday to Thursday, February 12, 13, 14, 15.....Farmers' Week.

Friday, February 9, 4:35 P. M.....First Term Ends.

Monday, February 12.....Second Term Begins.

Registration, 9 A. M.

Tuesday, February 13.....Recitations begin, 8:10 A. M.

Thursday, February 22, holiday.....Washington's Birthday.

Wednesday, April 4, 4:35 P. M.

Tuesday, April 10, 8:10 A. M. }Easter Recess.

Friday, May 11, holiday.....Arbor Day.

Saturday, May 12.....Interscholastic Track Meet.

Wednesday, May 30, holiday.....Memorial Day.

Sunday, June 17.....Baccalaureate Address.

Thursday, June 21.....Commencement Exercises.

CALENDAR.

1916.

1917.

1916.							1917.						
JUNE.	MAY.	APRIL.	MARCH.	FEB.	JAN.		JUNE.	MAY.	APRIL.	MARCH.	FEB.	JAN.	
S	M	T	W	T	F	S	S	M	T	W	T	F	S
2	3	4	5	6	7	8	2	3	4	5	6	7	8
9	10	11	12	13	14	15	9	10	11	12	13	14	15
16	17	18	19	20	21	22	16	17	18	19	20	21	22
23	24	25	26	27	28	29	23	24	25	26	27	28	29
30	31	30	31
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6	7	8	9	10	11	12	6	7	8	9	10	11	12
13	14	15	16	17	18	19	13	14	15	16	17	18	19
20	21	22	23	24	25	26	20	21	22	23	24	25	26
27	28	29	27	28	29	30	31
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5	6	7	8	9	10	11	3	4	5	6	7	8	9
12	13	14	15	16	17	18	10	11	12	13	14	15	16
19	20	21	22	23	24	25	17	18	19	20	21	22	23
26	27	28	29	30	31	..	24	25	26	27	28	29	30
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8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31	..	..	..	..	29	30	31	..	..	..	..
..	..	..	1	2	3	4	..	..	..	..	..	..	..
5	6	7	8	9	10	11	5	6	7	8	9	10	11
12	13	14	15	16	17	18	12	13	14	15	16	17	18
19	20	21	22	23	24	25	19	20	21	22	23	24	25
26	27	28	29	30	31	..	26	27	28	29	30
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3	4	5	6	7	8	9	3	4	5	6	7	8	9
10	11	12	13	14	15	16	10	11	12	13	14	15	16
17	18	19	20	21	22	23	17	18	19	20	21	22	23
24	25	26	27	28	29	30	24	25	26	27	28	29	30
31	..	..	..	..	..	..	31	..	..	..	..	..	..

RHODE ISLAND STATE COLLEGE

Foundation

The college is one of the so-called land-grant colleges. Of the purpose of these institutions Senator Morrill, the author of the national legislation which brought them into existence in all the states, says:

“The fundamental idea was to offer an opportunity in every state for a liberal and larger education to large numbers, not merely those destined to sedentary professions, but to those needing higher instruction for the world’s business, for the industrial pursuits and professions of life.” Again he says: “It was to give a chance to the industrial classes of the country to obtain a liberal education, something more than what was bestowed by our universities and colleges in general, which seemed to be based more on the English plan of giving education only to what might be called the professional classes, in law, medicine, and theology.”

The college has also a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows:

(1) The interest on \$50,000, which was the net amount received by the State from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.

(2) The annual appropriation of \$15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.

(3) The annual appropriation of \$25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as

follows: "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the State under the Adams Act of 1906, yielding each year \$15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting yearly to \$25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The funds coming from the general government to the State under the Smith-Lever Act of 1914, amounting yearly to \$10,000. This fund is exclusively for extension work in agriculture and home economics.

(7) The annual maintenance fund from the state, of \$40,000, used for all the purposes for which the funds of the general government cannot be used: *e. g.*, for executive and administrative work; for heating, lighting, and maintenance of buildings; for the teaching of modern languages other than English; for the teaching of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroughly revised during the years 1906-07 and 1907-08. The course in home economics for young women was introduced in 1908.

Object and Organization

The function of the Rhode Island State College is to aid in fostering the industrial life of the State, at least in so far as pertains to agriculture, manufactures, transportation, and home making. This it does in three ways: 1. by the investigation and discovery of new truths more or less directly applicable in the industries: 2. by the direct distribution of industrial information to the people; 3. by the organization and administration of definite courses of instruction

designed to fit young men and young women for effective work in the industrial pursuits.

The first of these duties is performed by the

Experiment Station

for a description of the work of which the reader is referred to the report of the director, included in the report of the Board of Managers for the current year. A statement of its staff organization may be found on page 7 of this catalog.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all who desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, a

College Extension Department

has been organized, and is in active operation.

The purpose of this department is to carry the instruction of the college to those who cannot come to it for study. Whenever necessary and possible, visits will be made to any part of the State to examine farms, orchards, and gardens; to identify injurious insects or plant diseases, or give instruction in regard to methods of treatment; or to examine soils with a view to suggesting remedies for lack of fertility. General plans for laying out farms and for carrying out the details of any farm operation will be given the fullest consideration. The college is available for consultation at any time in regard to any problem of the farm, garden, or orchard. The fullest correspondence is invited, and conscientious consideration will be given to every letter received. In conjunction with this phase of the work, popular bulletins are issued from time to time, which endeavor to present the gist of agricultural information on various topics without the uninteresting detail which the usual experiment station bulletins must often include.

Whenever possible, arrangements will be made for demonstrations or lectures by members of the college faculty and experiment station staff when called for by any agricultural meeting or neighborhood gathering. A number of lectures on various subjects has been prepared, which can be secured on short notice by any gathering or organization within the State. These lectures are free, the only

charge being the traveling expenses of the speaker. A complete list of the lectures, together with such other information in regard to them as may be of interest, has been prepared and may be obtained by sending a postal-card request to the department.

Eventually an important part of the extension work will be the encouragement of home study through correspondence courses and study clubs supervised by the college. For the present, time and funds will not permit an adequate development of this project except in one or two lines, but advice will be given to any person wishing to take up home study, regarding courses of reading, books, and other literature which may be necessary in connection with such work.

In coöperation with the United States Department of Agriculture, the extension service of the college is now able to offer a system of club work originated by the Federal Department, thru which boys and girls can take up definite agricultural projects in their homes and carry them to a successful conclusion. These projects include poultry keeping, orcharding, home or school gardening, corn growing, potato growing, dairy herd records, canning of fruit and vegetables, baking, sewing, etc.

In coöperation with the Federal Department also, an extension instructor in farm management and in agricultural organization has been engaged, whose work is to aid farmers in planning their farms and in forming coöperative organizations. A coöperative project which is being pushed at the present time is the establishment of three or more county agents in the State of Rhode Island.

Another extension instructor has been engaged to conduct demonstrations in agronomy in different sections of the State, the purpose of which is to show the best methods of growing crops now common in the State or to make the farmers familiar with new kinds or varieties which may be of value in Rhode Island.

Home economics is receiving attention thru an extension instructor who devotes her attention to study clubs, lectures, correspondence, and demonstrations which have for their purpose giving information to the housewives of the State.

Further notes in regard to this work are given in leaflets and circulars issued by the extension department, and correspondence from any one who may be interested therein is invited. This information can be secured by sending an inquiry to the department.

Engineering Extension Work

In the engineering department, as well as in the other branches of the college, the endeavor is to be of the greatest possible service to the people of the State, not only in the matter of providing formal instruction to students coming to the college, but also in giving help and information to those outside the college enrollment who are desirous of extending their technical knowledge, and to whom, for one reason or another, a regular college course is impossible.

To this end there has been offered in the past a short course of two years' duration in which instruction has been given in the elements of engineering. Experience, however, has shown that those most eager to avail themselves of this kind of instruction, and those who would be most helped by it, are unable to leave their regular duties to attend classes at the college.

As a consequence, the short course work in engineering at the college has been discontinued, and in its place has been inaugurated the plan of extension work in engineering. Instead of taking the man away from his regular duties to bring him to the work, the present plan is to carry the work to the man.

This extension work is carried out in two chief ways,—by means of separate lectures on specific topics, and by means of progressive study in organized classes. The subjects presented are all of a technical character and are adapted to the particular needs and capabilities of the classes.

The present requirements for such class work are that a suitable place for meeting be provided, and that the attendance be regular. This regularity of attendance is a matter of the greatest importance, since without it little or no progress is possible.

Classes have been conducted in various places in The Use of the Slide Rule, Mechanism and Shop Calculations, Power Plant Computations, etc. Instruction in these and any other desired branch of engineering may be had by citizens of the State by complying with the requirements mentioned, the number of such courses being limited only by the available time of the members of the department. Also lecturers will be provided to present various phases of engineering before technical organizations and engineering societies.

The College as an Educational Agency

In its third form of activity, the purpose and work of the Rhode Island State College is to give college training and culture to young men and young women, not in spite of, but thru and with, vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroly efficient worker.

I. THE FOUR-YEAR COURSES

To this end certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in mathematics, pure and applied; the English language as a means of intercommunication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses, moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-winning, but also preparation for citizenship, for moral and social life, have intertwined with the vocational work and study, previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology, and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools. They thus become an integral part of the school system of the State. Young men and young women, citizens of the State and having requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are the agricultural course, the engineering course, the teachers' course in applied science, and the course in home economics.

The Agricultural Course

The agricultural course is intended to give thoro preparation for taking charge of and operating a piece of landed property. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thoro study of the sciences bearing directly on such work, viz.: botany, chemistry, geology, zoölogy, anatomy, physics, bacteriology, and entomology. In addition, it embraces the culture and mental discipline arising from the study of mathematics, English composition and rhetoric, history, drawing, modern languages, economics, and English literature. The course is planned to give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first year; in the sophomore year, one elective is offered; in the second half of the junior year, in addition to the required work for all students in the course, two optional lines of work are offered, one of which must be selected by the student and followed until graduation. The two lines offered are horticulture and animal husbandry. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. Beginning with the class of 1919, all candidates for a degree in the agricultural course shall be required to have spent at least six months in practical farm work before the degree shall be granted. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
German or French—I or II.....	3	German or French (I or II).....	3
Math. III—Algebra.....	2½	Chemistry II—General Chem. and	
Math. II—Trigonometry.....	2½	Qualitative Analysis.....	3 [1½]
Chemistry I—General.....	2 [1½]	Botany I—General.....	1 [2]
Botany I—General.....	1 [2]	An. Husb. I—Stock Judging.....	[2]
Hort. I—Propagation of Plants.....	1 [1]	An. Husb. III—Breeds.....	2
Freehand Drawing II—Pencil.....	[1]	Hort. II—Vegetable Gardening.....	2
Psy. and Ed. VIII—How to Study.....	½	Hort. IV—Spraying and Pruning.....	1 [1]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics II—Theory.....	½	Mil. Sci. and Tactics II—Theory.....	½

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	German or French.....	3
German or French.....	3	Chem. XIV—Agricultural Chemistry...	3 [1]
Chem. IV—Organic Chemistry.....	3 [1]	Physics I—Descriptive Physics.....	5
Botany II—Botany of Crops and Weeds.	1 [2]	Zoölogy X—Vertebrate Zoölogy.....	2 [2]
Zoölogy X—Vertebrate Zoölogy.....	2 [2]	Geology I.....	2
Civil Engineering I—Surveying.....	1 [2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]		
Agronomy II—Forage Plants.....	2		
or			
Hort. XIV—Arboriculture.....	1 [1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
An. Husb. X—Vet. Practice.....	3	Agronomy IV—Farm Crops.....	3 [1]
An. Husb. XIIa.....	1	Agronomy VII—Farm Management...	2
Agronomy III—Soils and Fertilizers...	4 [1½]	Mil. Sci. and Tactics I—Drill.....	[1]
Hort. III—Fruit Culture.....	2	Mil. Sci. and Tactics III—Theory for	
Hort. XV1—Landscape Gardening...	1 [2]	Commissioned Officers.....	½
Mil. Sci. and Tactics I—Drill.....	[1]	Options: A or B.	
Mil. Sci. and Tactics III—Theory for		All of the subjects in one of the following	
Commissioned Officers.....	½	groups must be chosen:	

A. Horticulture.

Botany IV—Forestry or Hort. XV—	
Tree Surgery.....	2
Zoölogy. IV—Economic Entomology...	3 [1]
Elective.....	3

B. Animal Husbandry.

An. Husb. VII—Dairy Practice.....	1 [2]
Agronomy VI—Farm Machinery.....	2 [1]
Elective.....	3

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2 ¾	History II—Civil Government.....	1 ½
History II—Civil Government.....	1 ½	English V—Shakspere.....	2 ¾
English X—Oratorical Writing and Ex-		English X—Oratorical Writing and Ex-	
temporaneous Speaking.....	1	temporaneous Speaking.....	1
Agronomy X—Agricultural Experimen-		An. Husb. VI—Feeds and Feeding....	3
tation.....	3	Bacteriology I—General.....	1 [2]
Agronomy XI—Plant Breeding.....	3	Mil. Sci. and Tactics I—Drill.....	[1]
Bacteriology I—General.....	1 [2]	Mil. Sci. and Tactics III—Theory for	
Mil. Sci. and Tactics I—Drill.....	[1]	Commissioned Officers.....	½
Mil. Sci. and Tactics III—Theory for		Options: A or B.	
Commissioned Officers.....	½	All of the subjects in one of the following	
Elective.....	8	groups must be chosen:	

A. Horticulture.

Botany IV—Forestry or Hort. XV—	
Tree Surgery.....	2
Elective.....	9

B. Animal Husbandry.

An. Husb. IV—Breeding.....	3
Elective.....	8

The Engineering Course

The engineering course has the same duration and the same general plan as that usually offered in the standard technical colleges. Students will follow the course as laid down until the sophomore year, at which time they must elect one of the four optional lines offered, viz.: mechanical, electrical, civil, and chemical engineer-

ing. Any line of work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and efficient work in the great manufacturing and commercial industries of the State; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. The tabulated course follows:

Freshman Year

For the first year the course is the same for all students of engineering.

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition...	3	English I—Rhetoric and Composition...	3
German or French—(I or II).....	3	German or French—(I or II).....	3
Math. I—Algebra.....	2½	Math. VIIIA—Analytics.....	5
Math. II—Trigonometry.....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Chemistry I—General.....	2 [1½]	Mech. Eng. I—Mechanical Drawing...	[2]
Mech. Eng. I—Mechanical Drawing...	[3]	Mech. Eng. III—Pattern Making....	[3]
Mech. Eng. II—Forge and Foundry...	[3]	Mil. Sci. and Tactics I—Drill.....	[1]
Phy. and Ed. VIII—How to Study....	½	Mil. Sci. and Tactics II—Theory.....	½
Mil. Sci. and Tactics I—Drill.....	[1]		
Mil. Sci. and Tactics II—Theory.....	½		

MECHANICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1½]
Physics III—Laboratory.....	[1½]	Math. XI—Calculus.....	5
Math. X—Calculus.....	5	Mech. Eng. IV—Graphic Statics.....	2
Mech. Eng. V—Descriptive Geometry...	1 [2]	Mech. Eng. VI—Mechanical Drawing..	[3]
Mech. Eng. XXVI—Indus. Organization and Management.....	3	Mech. Eng. XII—Mechanism.....	3
Civil Eng. I—Surveying.....	1 [2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
Mech. Eng. VIII—Machine Drafting...	[3]	Mech. Eng. IX—Heat Engineering....	3
Mech. Eng. IX—Heat Engineering....	3	Mech. Eng. X—Applied Mechanics....	1½
Mech. Eng. X—Applied Mechanics....	5	Mech. Eng. XI—Hydraulics.....	3½
Mech. Eng. XIV—Machine Shop.....	[3]	Mech. Eng. XIII—Valve Gears.....	3
Mech. Eng. XV—Experimental Engineering a.....	[2]	Mech. Eng. XIV—Machine Shop.....	[3]
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. XVI—Experimental Engineering b.....	[2]
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½	Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2 $\frac{2}{3}$	History II—Civil Government.....	1 $\frac{1}{2}$
History II—Civil Government.....	1 $\frac{1}{3}$	English V—Shakspere.....	2 $\frac{2}{3}$
English X—Oratorical Writing and Ex- temporaneous Speaking.....	1	English X—Oratorical Writing and Ex- temporaneous Speaking.....	1
Mech. Eng. XVII—Experimental Engi- neering c.....	2 [2]	Mech. Eng. XVIII—Experimental Engi- neering d.....	[2]
Mech. Eng. XX—Machine Design.....	[3]	Mech. Eng. XIX—Heating and Ven- tilation.....	1
Mech. Eng. XXI—Power Plants and Design.....	2 [1]	Mech. Eng. XX—Machine Design.....	[3]
Mech. Eng. XXII—Assigned Work....	3	Mech. Eng. XXII—Assigned Work....	3
Elec. Eng. I—Theory of Direct Currents.	3	Mech. Eng. XXIII—Dynamics of Ma- chines.....	2
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. XXIV—Works Manage- ment.....	1
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	$\frac{1}{2}$	Elec. Eng. II—Direct Current Labora- tory.....	[3]
		Elec. Eng. IV—Theory of Alternating Currents.....	2
		Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	$\frac{1}{2}$

ELECTRICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading....	1	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1 $\frac{1}{2}$]
Physics III—Laboratory.....	[1 $\frac{1}{2}$]	Math. XI—Calculus.....	5
Math. X—Calculus.....	5	Mech. Eng. IV—Graphic Statics.....	2
Chem. III—Qualitative Analysis.....	[3]	Mech. Eng. VI—Mechanical Drawing..	[3]
Mech. Eng. V—Descriptive Geometry..	1 [2]	Mech. Eng. VII—Machine Shop.....	[2]
Civil Engineering I—Surveying.....	1 [2]	Elec. Eng. IIIa—Principles of Elec. Eng.	$\frac{1}{2}$
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
El. Eng. I—Theory of Direct Currents..	3	El. Eng. II—Direct Current Laboratory.	[3]
El. Eng. IIIb—Principles of Elect. Eng.	1	El. Eng. IV—Theory of Alternating Currents.....	2
Physics V—Electrical Measurements....	1 [1 $\frac{1}{2}$]	Mech. Eng. IX—Heat Engineering....	3
Physics VI—Principles of Illumination..	1 [1 $\frac{1}{2}$]	Mech. Eng. X—Applied Mechanics....	1 $\frac{1}{2}$
Mech. Eng. IX—Heat Engineering.....	3	Mech. Eng. XI—Hydraulics.....	3 $\frac{1}{2}$
Mech. Eng. X—Applied Mechanics.....	5	Mech. Eng. XVI—Experimental Engi- neering a.....	[2]
Mech. Eng. XV—Experimental Engi- neering a.....	[2]	Mil. Sci. and T. I—Drill.....	[1]
Mil. Sci. and T. I—Drill.....	[1]	Mil. Sci. and T. III—Theory for Com- missioned Officers.....	$\frac{1}{2}$
Mil. Sci. and T. III—Theory for Com- missioned Officers.....	$\frac{1}{2}$		

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2 $\frac{2}{3}$	History II—Civil Government.....	1 $\frac{1}{2}$
History II—Civil Government.....	1 $\frac{1}{3}$	English V—Shakspere.....	2 $\frac{2}{3}$
English X—Oratorical Writing and Ex- temporaneous Speaking.....	1	English X—Oratorical Writing and Ex- temporaneous Speaking.....	1
El. Eng. V—Theory of Alternating Cur- rents.....	3	El. Eng. V—Theory of Alternating Cur- rents.....	3
El. Eng. VI—Alternating-Current Labo- ratory.....	[3]	El. Eng. VI—Alternating Current Labo- ratory.....	[3]
El. Eng. VIII—Telephone Engineering.	1	El. Eng. VII—Design of Electrical Ma- chinery.....	[3]
El. Eng. X—Transmission of Energy....	2	El. Eng. XI—Electric-Railway Engi- neering.....	2
El. Eng. XII—Assigned Work.....	[3]	El. Eng. XII—Assigned Work.....	[3]
Mech. Eng. XVII—Experimental Engi- neering c.....	2 [2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mech. Eng. XXI—Power Plants.....	2	Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	$\frac{1}{2}$
Mil. Sci. and Tactics I—Drill.....	[1]		
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	$\frac{1}{2}$		

CIVIL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading....	1	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1½]
Physics III—Laboratory.....	[1½]	Math. XI—Calculus completed.....	5
Math. X—Calculus.....	5	Mech. Eng. IV—Graphic Statics.....	2
Chemistry III—Qualitative Analysis....	[3]	Mech. Eng. VI—Mechanical Drawing....	[3]
Mech. Eng. V—Descriptive Geometry....	1 [2]	Mech. Eng. VII—Machine Shop.....	[1½]
Civil Eng. I—Surveying.....	1 [2]	Civ. Eng. II—Topographic Surveying....	1 [2]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
Civil Eng. III a—Railroad Engineering....	5	Civ. Eng. III b.—Railroad Engineering....	3
Civil Eng. IV—Graphic Statics.....	2	Civ. Eng. V—Roads and Pavements....	3 [1]
Mech. Eng. X—Applied Mechanics.....	5	Mech. Eng. X—Applied Mechanics.....	1½
Mech. Eng. XXV—Elements of Thermodynamics.....	3	Mech. Eng. XI—Hydraulics.....	3½
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. XVI—Experimental Engineering b.....	[2]
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½	Geology.....	2
		Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2½	History II—Civil Government.....	1½
History I—Civil Government.....	1½	English V—Shakspeare.....	2½
English X—Oratorical Writing and Extemporaneous Speaking.....	1	English X—Oratorical Writing and Extemporaneous Speaking.....	1
Mech. Eng. XVII—Experimental Engineering c.....	2 [2]	Mech. Eng. XVIII—Experimental Engineering d.....	[2]
Civil Eng. VI—Bridge Details.....	[2]	Civil Eng. VIII—Bridge Design.....	[3]
Civil Eng. VII—Bridge Analysis.....	2	Civil Eng. X—Reinforced Concrete....	2
Civil Eng. IX—Masonry Construction....	2 [1]	Civil Eng. XII—Water Supply.....	3
Civil Eng. XI—Sewerage.....	2	Civil Eng. XIII—Tunneling.....	1
Civil Eng. XV—Assigned Work.....	3	Civil Eng. XIV—Contracts and Specifications.....	2
Mil. Sci. and Tactics I—Drill.....	[1]	Civil Eng. XV—Assigned Work.....	3
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½	Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½

CHEMICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading....	1	German.....	3
German.....	3	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1½]
Physics III—Laboratory.....	[1½]	Math. XI—Calculus.....	5
Math. X—Calculus.....	5	Chemistry III a—Qualitative Analysis..	1 [3]
Chemistry IV—Organic.....	3 [1]	Mech. Eng. XII—Mechanism.....	3
Mech. Eng. V—Descriptive Geometry....	1 [2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays	4	English IX—Debating	1
English IX—Debating	1	History I—Industrial History	4
Mech. Eng. IX—Heat Engineering	3	Mech. Eng. IX—Heat Engineering	1½
Mech. Eng. X—Applied Mechanics	5	Mech. Eng. X—Applied Mechanics	1½
Chemistry VII—Quantitative Analysis	[3]	Mech. Eng. XI—Hydraulics	3½
Chemistry XVI—Industrial Chemistry	4	Chem. VIII—Quantitative Analysis	[4½]
Chem. XXI—Reports and Discussions	1	Chemistry XII—Physical Chemistry or	4 [1]
Mil. Sci. and Tactics I—Drill	[1]	Chem. V—Organic Chemistry	4
Mil. Sci. and Tactics III—Theory for		Chem. XXI—Reports and Discussions	1
Commissioned Officers	½	Mil. Sci. and Tactics I—Drill	[1]
		Mil. Sci. and Tactics III—Theory for	
		Commissioned Officers	½

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy	2½	History II—Civil Government	1½
History II—Civil Government	1½	English V—Shakspeare	2½
English X—Oratorical Writing and Ex-		English X—Oratorical Writing and Ex-	
temporaneous Speaking	1	temporaneous Speaking	1
Mech. Eng. XV—Experimental Engi-		Mech. Eng. XXIV—Works Manage-	
neering a	[2]	ment	1
Elec. Eng. I—Theory of Direct Currents	3	Chemistry VI—Organic Chemistry	[3]
Chem. VIII—Quantitative Analysis	[3]	Chemistry XII—Physical Chemistry or	4 [1]
Chem. XVII—Industrial Chemistry	[4]	Chemistry V—Organic Chem	4
Chem. XX—Assigned Work	3	Chem. XI—Determinative Mineralogy	[1½]
Chem. XXI—Reports and Discussions	1	Chemistry XX—Assigned Work	3
Mil. Sci. and Tactics I—Drill	[1]	Chem. XXI—Reports and Discussions	1
Mil. Sci. and Tactics III—Theory for		Mil. Sci. and Tactics I—Drill	[1]
Commissioned Officers	½	Mil. Sci. and Tactics III—Theory for	
		Commissioned Officers	½

Vocational Course in Applied Science

This course is intended mainly to prepare persons to teach in industrial schools those branches of applied science that pertain especially to agriculture and the mechanic arts. In such schools it has been found of especial importance that the teachers be trained in an environment of current thought, sympathetic with the industrial applications of science and intelligently appreciative of the methods and problems of such work. In response, therefore, to the need, and in accordance with an expressed purpose of the Nelson fund from the United States Government, this course has been constructed. The effort has been to make the course effective for its purpose, while at the same time retaining for it that breadth and that cultural influence that are necessary to fit the whole man or woman for social life and are especially important in persons who, as teachers, will exercise large personal influence over immature youth.

In addition to preparation for teaching which this course affords, many of the subjects offered possess vocational significance of importance outside of the field of teaching, as in the practical application of botany, zoölogy, entomology, and bacteriology to problems of

everyday life. In these subjects, as well as in agriculture and chemistry, the applied science course makes specialization possible.

Students who do not intend to teach may substitute other subjects for the educational subjects. The course offers to the student, at the beginning of the junior year, options in agriculture, biology, and chemistry, one of which he must select in conjunction with certain studies required of all. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
German or French (I or II).....	3	German or French (I or II).....	3
Math. I—Algebra.....	2½	Chemistry II—General Chem. and Qualitative Analysis.....	3 [1½]
Math. II—Trigonometry.....	2½	Botany I—General.....	1 [2]
Chemistry I—General.....	2 [1½]	Math. VIII b—Analysis.....	5
Botany I—General.....	1 [2]	Freehand Drawing II—Pencil.....	[1]
Hort. I—Propagation of Plants.....	1 [1]	{ Mil. Sci. and Tactics I—Drill.....	[1]
Freehand Drawing II—Pencil.....	[1]	{ Mil. Sci. and Tactics II—Theory....	½
Psy. and Ed. VIII—How to Study.....	½	or	
{ Mil. Sci. and Tactics I—Drill.....	[1]	{ Home Economics III b—Euthenics..	1
{ Mil. Sci. and Tactics II—Theory....	½	{ Physical Training.....	[1]
or			
{ Home Economics III a—Hygiene....	1		
{ Physical Training.....	[1]		

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	German or French.....	3
German or French.....	3	Chemistry III a—Qualitative Analysis.	1 [3]
Chemistry IV—Organic.....	3 [1]	Geology I.....	2
Botany II—Botany of Crops and Weeds.	1 [2]	Zoology X—Vertebrate Zoology.....	2 [2]
Zoology X—Vertebrate Zoology.....	2 [2]	Physics II—General.....	4
Physics II—General.....	4	Physics III—Laboratory.....	[1½]
Physics III—Laboratory.....	[1½]	Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]
Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
Psy. and Ed. IV—General Psychology or Psy. and Ed. II.....	3	Psy. and Ed. I or.....	3
Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]	Psy. and Ed. III.....	3
Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½	Mil. Sci. and Tactics I—Drill or Physical Training.....	[1]
Elective.....	3	Mil. Sci. and Tactics III—Theory for Commissioned Officers.....	½
Options: A, B or C.		Elective.....	4
All of the subjects in one of the following groups must be chosen:		Options: A, B or C.	
A. Agriculture.		All of the subjects in one of the following groups must be chosen:	
Agronomy III—Soils.....	4 [1½]	A. Agriculture.	
Hort. III—Fruit Culture.....	2	Agronomy IV—Farm Crops.....	3 [1]
B. Biology.		Zoology IV—Economic Entomology...	3 [1]
Zoology VIII—Histology.....	2 [3]	Botany IV—Forestry or Hort. IV—Spraying and Pruning...	1 [1]
Botany V—Plant Histology.....	[4]	B. Biology.	
C. Chemistry.		Botany VI—Plant Pathology.....	1 [4]
Chemistry VII—Quantitative Analysis.	[3]	Zoology I—Invertebrate Zoology.....	1 [2]
Chemistry XVI—Industrial Chemistry.	41	C. Chemistry.	
Chemistry XXI—Reports and Discussions.....	1	Chemistry VIII—Quantitative Analysis.	[4½]
		Chemistry XXI—Reports and Discussions.....	1
		{ Chemistry XII—Physical Chem. or	4 [1]
		{ Chemistry V—Organic Chem.....	4

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2½	History II—Civil Government.....	1½
History II—Civil Government.....	1½	English V—Shakspeare.....	2½
English X—Oratorical Writing and Ex-		English X—Oratorical Writing and Ex-	
temporaneous Speaking.....	1	temporaneous Speaking.....	1
{ Psy. and Ed. IV—General Psychology	3	{ Psy. and Ed. III—Secondary Education	3
or Psy. and Ed. II—Principles of		or Psy. and Ed. I.....	3
Education.....	3	Assigned Work.....	2
Assigned Work.....	3	Mil. Sci. and Tactics I—Drill or Physical	
Mil. Sci. and Tactics I—Drill or Physical		Training.....	[1]
Training.....	[1]	Mil. Sci. and Tactics III—Theory for	
Mil. Sci. and Tactics III—Theory for		Commissioned Officers.....	½
Commissioned Officers.....	½	Options: A, B or C.	
Options: A, B or C.		All of the subjects in one of the follow-	
All of the subjects in one of the follow-		ing groups must be chosen:	
ing groups must be chosen:		A. <i>Agriculture.</i>	
A. <i>Agriculture.</i>		Hort. II—Vegetable Gardening.....	2
An. Husb. XIV—Poultry.....	[2]	An. Husb. IV—Breeding.....	3
Hort. X—Pomology.....	3	An. Husb. VI—Feeding.....	3
Hort. XVI—Landscape Gardening.....	1 [2]	*B. <i>Biology.</i>	
*B. <i>Biology.</i>		{ Botany IV—Forestry.....	2
Agronomy XI—Plant Breeding.....	3	or	
Botany III—Trees and Shrubs.....	[1]	{ Hort. IV—Spraying and Pruning... 1 [1]	
Zoölogy V—Entomology.....	1 [2]	Zoölogy II—General Zoölogy.....	1 [2]
C. <i>Chemistry.</i>		Zoölogy V—Entomology.....	2 [2]
Chemistry XVII—Industrial Chemistry.	[4]	Botany III—Trees and Shrubs.....	[1]
Chemistry XXI—Reports and Discus-		C. <i>Chemistry.</i>	
sions.....	1	Chemistry VI—Organic Chemistry.....	[3]
Elective.....	3	Chemistry XI—Determinative Mineral-	
		ogy.....	[1½]
		{ Chemistry XII—Physical Chemistry	4 [1]
		or Chemistry V—Organic Chem... 4	
		Chemistry XXI—Reports and Discus-	
		sions.....	1

*Bacteriology may be substituted for one of the subjects in the Biological option. See Bacteriology I, II and III, p. 49.

The Course in Home Economics

The object of the home economics course is to fit young women for home making and to provide adequate training for teachers of the various household arts. Nowhere is the application of modern science to everyday life more important than in the home. In no other life-work do women find greater need of scientific knowledge and technical skill than in the intelligent and economic administration of household affairs.

The course includes instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene; and instruction in the care of infants and young children. During one year instruction is given in hand sewing, machine practice, and in drafting, cutting, and making of plain garments. Although the main work is scientific and technical, the importance of artistic and literary training for home life has not been neglected. It is recognized that all the knowledge of right living is needed to assist the student to a broader conception of citizenship as well as in performing the manifold duties of daily life.

Attention has also been given, in planning the course, to the need of students desiring to enter special fields of domestic activity along institutional and educational lines of work.

The entrance requirements are the same as for the other college courses. Thirty-eight of the credits required for graduation are in the home economics department. Students are expected to take the course as outlined below, with choice of electives; but when entered in other courses in the college they may elect certain work in the home economics department, under direction of the head of the department. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
German or French (I or II).....	3	German or French (I or II).....	3
Math. III—Algebra.....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Math. II—Trigonometry.....	2½	Botany I—General.....	1 [2]
Chemistry I—General Chemistry.....	2 [1½]	Freehand Drawing II—Pencil.....	1 [1]
Botany I—General.....	1 [2]	Home Economics I—Domestic Art....	2 [3]
Freehand Drawing II—Pencil.....	(1)	Home Economics IIIa—Hygiene.....	1
Home Economics I—Domestic Art....	(1)	Home Economics IIIb—Euthenics....	1
Home Economics IIIa—Hygiene.....	1	Physical Training.....	(1)
Psy. and Ed. VIII—How to Study.....	½		
Physical Training.....	(1)		

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	German or French.....	3
German or French.....	3	Chemistry IIIa—Qualitative Analysis..	1 [3]
Chemistry IV—Organic.....	3 [1]	Zoology X—Vertebrate.....	2 [2]
Zoology X—Vertebrate.....	2 [2]	Physics I—Descriptive.....	5
Freehand Drawing IV—Color Problems.	(1)	Home Economics IV—Foods.....	2 [1½]
Home Economics IV—Foods.....	3 [3]	Physical Training.....	(1)
Physical Training.....	(1)		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	4	English IX—Debating.....	1
English IX—Debating.....	1	History I—Industrial History.....	4
Psy. and Ed. IV—General Psychology..	3	Chemistry X—Food Analysis or Chemistry XIX—Physiological Chem..	4
Zoology VIII—Histology and Embryology.....	2 [3]	Freehand Drawing III—History of Art.	2
Home Economics VI—Human Nutrition.	(3)	Freehand Drawing VIII—Drawing.....	(1)
Home Economics IX—Sanitation.....	2	Home Economics VII—Home Decoration	2
Physical Training.....	(1)	Home Economics VIII—Dietetics.....	2 [1]
Elective.....	2	Physical Training.....	(1)
		Elective.....	2

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Political Economy.....	2½	History II—Civil Government.....	1½
History II—Civil Government.....	1½	English V—Shakspeare.....	2½
English X—Oratorical Writing and Extemporaneous Speaking.....	1	English X—Oratorical Writing and Extemporaneous Speaking.....	1
Freehand Drawing III—History of Art.	2	Home Economics XII—Home Nursing.	1
Home Economics XI—Hygiene and Care of Children.....	2	Home Economics XIV—Assigned Work.	3 [2]
Home Economics XXI—Home Administration.....	1 [2]	Bacteriology I—General.....	1 [2]
Bacteriology I—General.....	1 [2]	{ Chemistry X—Food Analysis or Chemistry XIX—Physiological Chem.	[4]
Physical Training.....	(1)	Physical Training.....	(1)
Elective.....	5	Elective.....	

II. SHORT OR SPECIAL COURSES IN DOMESTIC SCIENCE

Where the age and attainments of applicants seem to warrant it, special courses in domestic science for those unable for any cause to take the regular four-years' course will be arranged, so far as the resources of the college will permit. Applicants desiring such special courses should apply before August 15, so as to allow ample time for full correspondence and investigation before a final decision in the individual case is taken on the part of the college.

III. SHORT COURSE IN AGRICULTURE

To meet the needs of those who find it out of their power to undertake a four years' college course, but who, nevertheless, desire to increase their efficiency on the farm, the college offers what is known as a short course in agriculture. Students may with advantage take only a part of the course if unable to remain for the whole time.

It is required of applicants for this course that they be at least eighteen years of age at entrance, that they shall have completed at least the common school, that they shall have a definite purpose in mind in applying for the course, and *that within three weeks after entrance they shall satisfy their teachers that they are sufficiently mature, sufficiently earnest, and sufficiently capable to warrant their remaining for the course.* Every effort will be made to guard this course from becoming a refuge for the idle, the purposeless, and therefore the unsuccessful, and to that end drastic measures of elimination will be used whenever necessary, but especially at the end of the first three weeks of the year.

The course is in no case supposed to serve as a substitute for the regular work of the college either in character or in scope of the subject-matter presented, and does not lead, directly or indirectly, to a degree, a certificate only being granted. Neither is it to be considered as preparatory to the college work. Its particular function is to give, in the shortest, most direct, way possible, certain definite, specific, and perhaps uncorrelated information which will be of immediate value on the farm.

The short course in agriculture will be given in two school years of twenty-four weeks, beginning the middle of October and ending the middle of April. The object of this change in dates from that of the regular college course is to permit those who find it impossible to be away from the farm during the busy season of the year to obtain the advantages of this special training during the slack season.

In order that seriousness of purpose as regards an agricultural occupation may be assured from those taking the agricultural short course, no student will be permitted to register for the second year's work who has not had at least six months' practical experience on a farm. This experience should be obtained upon a farm making a specialty of the line of work which the student intends to follow.

The special work in agriculture treats in an elementary way of such subjects as plant life, soils and fertilizers, vegetable gardening, stock judging, crops, dairy practice, poultry, fruit culture, etc.

Short-course work is of comparatively recent introduction at this institution, and consequently is still in the process of development. The tabulated course follows:

First Year

Work commences October 16, 1916. First year subjects run continuously for the year

	CREDITS
Botany A—Plant Life.....	1 [2½]
Agronomy A—Soils and Fertilizers.....	3 [1]
An. Husb. B—Stock Judging.....	[2]
An. Husb. A—Breeds.....	2
Chem. A—Plant and Animal.....	3 [1½]
An. Husb. H—Poultry.....	1 [2]

Second Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Agron. B—Crops and Rotation.....	3 [1½]	Hort. A—Vegetable Gardening.....	3 [1½]
An. Husb. C—Dairy Practice.....	1 [3]	Agron. C—Farm Management.....	3 [1]
Elementary Zoölogy—A.....	3 [2]	An. Husb. E—Principles of Breeding...	2 [1]
An. Husb. D—Principles of Feeding...	3	An. Husb. I—Farm Buildings.....	1 [½]
Hort. B—Fruit Culture.....	3 [1]	Agron. D—Farm Machinery.....	1 [3]
An. Husb. G—Care of Animals.....	2	Hort. E—Spraying and Pruning.....	2 [1½]
		Hort. F—Home Grounds.....	3

The following students received certificates, in 1915, upon the completion of the two years' course in agriculture: Miles Edwin Baldwin, William McKay Barclay, Alexander Dunbar, Orville Duane Murphy, Edward James Norman, Lawrence Stedman Peckham, Edward Steacie.

IV. SPECIAL POULTRY COURSE

Rhode Island State College in the winter of 1898 gave the first poultry course offered in the United States. Since that date the course has been offered annually to men and women of sufficient

maturity to understand the subject. The work consists of practice, reading, and attendance on lectures and demonstrations. Besides daily lectures by the college faculty, specialists from outside the college are secured to lecture on their various lines. In 1916 the following special lectures were given:

William F. Kirkpatrick, Connecticut Agricultural College, Storrs, Connecticut. "The Practical Results of the Egg Laying Contests."

Alfred R. Lee, Bureau of Animal Industry, Washington, D. C. "Government Experimental Work."

Samuel Knowles, South Easton, Mass. "Incubation and Brooding."

John A. Kiernan, East Providence, R. I. "The Production of Squabs."

Philip B. Hadley, Ph. D., Experiment Station, Kingston, R. I. "Problems of Inheritance."

Daniel J. Lambert, Extension Department, R. I. State College, Kingston, R. I. "Exhibiting and Judging Poultry."

V. SPECIAL COURSE FOR FARMERS

Convocation week for farmers of Rhode Island begins February 12 and closes February 15, 1917. Lectures on agricultural subjects are given hourly through the day with abundant opportunity for discussion. The lecturers are members of the college faculty, and specialists from outside the college. The special lectures for 1915 were as follows:

F. S. Madison, East Greenwich, R. I. "The Milk and Cream Situation in New England."

Gardner B. Willis, Technical High School, Providence, R. I. "Blacksmithing on the Farm."

Miss Alice M. Hunt, Secretary of the Consumers League, Providence, R. I. "What Every Woman in Rhode Island Should Know."

Frank J. Sibley, Wyoming, R. I. "Flowers, the Glory of the Farm."

H. A. Emerson, New York State Department of Foods and Markets.
 "The Economic Distribution of Farm Food Products."

Charles E. North, M. D., New York. "Better Milk and Better Prices."

John S. Murdock, Providence, R. I. "Organization for Coöperation."

Requirements for Admission to the Degree Courses

UNITS

The requirements for admission are reckoned in units. A "unit" represents the successful completion of a year's study of a subject, to which have been devoted not less than one hundred and twenty recitation periods of sixty minutes each, or their equivalent (*e. g.*, one hundred and eighty periods of forty minutes each). Fourteen units are required. A student may obtain this amount of entrance credit from high-school work or from examination.

GROUPS

The entrance subjects are divided into two groups, A and B. Those in A, unless otherwise indicated, are required of all candidates for admission. Candidates who have not studied algebra the past year are urged to review the subject during the summer before entering college. Observance of this warning will prevent many failures in college work.

GROUP A.

The school year is reckoned at thirty-six weeks, the minimum length.

English.....	108 weeks.....	3 units
German or French.....	36 weeks.....	1 unit
Algebra—for engineering students.....	54 weeks.....	1½ units
Algebra—for agricultural and home economics students, 36 weeks....		1 unit
Geometry, Plane.....	36 weeks.....	1 unit
Geometry, Solid—for engineering students only, 18 weeks.....		½ unit
Physics.....	36 weeks.....	1 unit
History.....	36 weeks.....	1 unit

The remainder of the fourteen units must be taken from

GROUP B.*

No subject is accepted for more than the amount here stated or for less than two-fifths of a unit.

Foreign Language.....	216 weeks.....	6 units.
Geometry, Solid—for other than engineering students, 18 weeks.....		$\frac{1}{2}$ unit.
Botany.....	36 weeks.....	1 unit.
Algebra—for students in agriculture and home economics, 18 weeks...		$\frac{1}{2}$ unit.
Chemistry.....	36 weeks.....	1 unit.
Geology.....	18 weeks.....	$\frac{1}{2}$ unit.
Physiography.....	36 weeks.....	1 unit.
Physiology.....	18 weeks.....	$\frac{1}{2}$ unit.
History.....	36 weeks.....	1 unit.
Drawing.....	36 weeks.....	1 unit.
Domestic Science.....	18 weeks.....	$\frac{1}{2}$ unit.
Shop Practice.....	18 weeks.....	$\frac{1}{2}$ unit.
Farm Practice.....	18 weeks.....	$\frac{1}{2}$ unit.

REGISTRATION

Registration occurs on the first day of each term, from 9 A. M. to 12 M., and from 1 P. M. to 4 P. M. A special fee of one dollar will be charged for registration after the first day of each term.

Each student is required to sign the following form of application before registering for the current year:

I hereby make application for registration as a student in Rhode Island State College for the year. In consideration of such registration and the attendance consequent thereupon, I hereby engage and obligate myself cheerfully to observe and conform to the rules of said college, having specifically in mind, without excluding others, that in relation to hazing and class disturbances. I further engage promptly and on my own motion to withdraw from the college whenever I find myself unable or unwilling to carry out the obligation herein assumed.

METHODS OF ADMISSION

On any or all of the subjects named in both groups, satisfactory standings from any reputable high school will be accepted in lieu of examination, on presentation of a copy of the student's full record in the high school, showing clearly the nature of the work pursued in

*Other subjects not here named will receive due consideration if presented on the application blank, with a statement of the work done.

each subject, time devoted to it, and grade of work done. This copy must be duly signed by the proper official of the school, and must be accompanied by a certificate of good moral character. The latter, however, may be from any reputable source. On application, blanks showing definitely the full nature of the information desired from the high school will be furnished.

Candidates not presenting satisfactory standings from reputable high schools will be examined, over ground corresponding to the number of units attached, on all the subjects of Group A and on such of Group B as they may offer. Examinations for entrance will be held at the opening of the college year in September, as announced in the calendar, page 8.

SPECIFICATIONS OF GROUND TO BE COVERED*

GROUP A

These subjects, with the exception stated, are required of all students to the extent indicated by the number of units designated in each case.

Languages

ENGLISH, 3 UNITS.—In English two aims are sought: first, a knowledge of the language—including the acquisition of an ample vocabulary and power of effective expression—second, some acquaintance with the literature. To attain the first, grammar and composition must be thoroly studied. Thruout the secondary-school course there should be much practice in writing along a variety of lines suggested by the pupil's experience, his general interests, and studies other than English. Spelling, punctuation, accuracy of idiom, should receive due attention in all written work; while correct and forceful oral expression should also be insisted upon.

To meet the requirement in literature certain selections are to be made from two lists of works—one for reading, the other for closer study. It is hoped to foster in this way a taste for good books and an intelligent appreciation of them. Committing to memory selected passages and reading aloud are strongly urged. In all cases some knowledge of the author's life and his place in literature should be acquired, while a more exacting study of selected texts would lay emphasis on form and style, meaning of particular words and phrases, and the significance of allusions. The list of books prescribed for 1916-17 may be obtained from the nearest high-school principal.

*For any or all of the subjects described below the requirements of the College Entrance Examination Board, upon which these specifications are largely based, will be accepted. A circular stating these requirements in detail and blank forms of application for examination may be obtained by sending ten cents in stamps to the College Entrance Examination Board, Post Office Sub-Station 84, New York City.

GERMAN, 1 UNIT.—During the first year the work should consist of drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry.

FRENCH, 1 UNIT.—The course in French should parallel that in German. During the first year there should be drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry.

Mathematics

ALGEBRA, $1\frac{1}{2}$ UNITS.—The requirement in algebra comprises the four fundamental operations; factoring, highest common factor and lowest common multiple; fractions; linear equations; exponents; radicals; quadratic equations; simultaneous equations involving quadratics; binomial theorem for positive integral exponents. Problems should be given at frequent intervals. Candidates for the courses in Agriculture and Home Economics are required to offer but one unit of this work.

PLANE GEOMETRY, 1 UNIT.—This requirement is met by the usual theorems and constructions of standard text-books, numerous originals, and applications.

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—The ground is covered by the usual theorems and constructions of standard text-books, originals, and applications.

Science

PHYSICS, 1 UNIT.—This course should consist of class-room work based on a standard text-book, accompanied by lecture-table demonstrations and by numerous practical problems. A parallel course in individual laboratory work is desirable, but is not absolutely required. In the case of laboratory work, one hour of credit will be allowed for each two hours spent in the laboratory.

History. 1 unit

The requirement in history will be met by presenting any one of the following subjects: ancient history, especially Greek and Roman, with the chief events of the early Middle Ages to the death of Charlemagne (814); medieval and modern European history from 814 to the present time; English history; American history and civil government.

GROUP B

From this group units are to be taken, in addition to those of Group A, sufficient to make up the whole number required. Any combination of units, including fractions not less than two-fifths, will be allowed.

Languages

GERMAN, 2 OR 3 UNITS.—The requirement for one unit is indicated under Group A. One unit will also be allowed for second and one each for third and

fourth year work. During the second year the course should be a continuation of the first as regards grammar, composition, and conversation. The reading should consist of at least 200 pages of such texts as Arnold's *Fritz auf Ferien*, Wildenbruch's *Das Edle Blut*, Mosher's *Willkommen in Deutschland* and Benedix' *Der Prozess*. Third-year study should emphasize reading and advanced composition. Suitable texts are Riehl's *Der Fluch der Schönheit*, Freytag's *Bilder aus der deutschen Vergangenheit*, Lessing's *Minna von Barnhelm*, Schiller's *Wilhelm Tell*, and Heine's *Die Harzreise*. The fourth year's work should mark a decided advance in the mastery of vocabulary and idiom as shown both in speaking and writing. The works read may be made the basis for themes. The following reading matter is suggested: Freytag's *Soll und Haben*, Fulda's *Der Talisman*, Hauff's *Lichtenstein*, Scheffel's *Eckehard*, Schiller's *Wallenstein*, *Maria Stuart*, or *Geschichte des dreissigjährigen Krieges* (Book III), Dahn's *Ein Kampf um Rom*, Goethe's *Dichtung und Wahrheit* (Books I-IV).

FRENCH, 2 OR 3 UNITS.—The requirement for one unit is indicated under Group A. One unit will also be allowed for second and one each for third and fourth year work. Thruout the second year the course should be a continuation of the first as regards grammar, composition, and conversation. At least 250 pages of such texts as Bruno's *Le Tour de la France*, Malot's *Sans Famille*, Mérimée's *Colomba*, Sarcy's *Le Siège de Paris*, and Hugo's *La Chute* should be read. In the third year emphasis should be laid on reading. Some time ought also to be given to advanced composition. Among suitable texts may be mentioned Racine's *Athalie*, Corneille's *Le Cid*, Molière's *Le Bourgeois Gentilhomme*, Sandeau's *Mademoiselle de la Seiglière*, Vigny's *La Canne de Jonc*. From the fourth year's study increased facility in conversation and composition should be gained, and any modern French, other than technical, should be read with ease. Such texts as the following are recommended: the prose works of Dumas père, Hugo's *Ruy Blas*, La Fontaine's *Fables*, Sainte-Beuve's *Essays*, Taine's *Origines de la France Contemporaine*, Pellissier's *Mouvement Littéraire au XIX^e Siècle*. At least 600 pages should be read.

LATIN, 1 TO 4 UNITS.—A credit of one unit will be given for each year's work in Latin, covering in all a standard beginners' book, four books of Cæsar's Gallic War, six orations of Cicero and six books of Virgil's *Æneid*. It is expected that work in prose composition and sight reading will be included in each subject.

Mathematics

SOLID GEOMETRY, $\frac{1}{2}$ UNIT —See Group A for other than engineering students.

Science

BOTANY, 1 UNIT.—The preparation in botany should include individual laboratory work recorded by notes and diagrammatic drawings. Field work is desirable, and should also be accompanied by notes. The notebook and drawings certified by the teacher should be presented at the time of application for entrance credit. The year's course of study should consist of three parts, viz.: 1. The general principles of the anatomy, morphology, physiology, and ecology of seed plants.

2. The natural history of the plant groups. The structure, reproduction, and adaptations to habitat of one or two types from each group should be studied.
3. Classification. A brief study of the subdivisions of the above groups. Ability to determine species of flowering plants is not essential. Any standard text-book covering the above field may be used.

CHEMISTRY, 1 UNIT.—An elementary text-book, such as William's Elements of Chemistry or First Principles of Chemistry, by Brownlee and others, should be covered by recitations. At least one exercise per week must be devoted to individual work in the laboratory. The pupil must perform forty or more experiments, such as are described in the Report of the College Entrance Examination Board, 1909, and keep a notebook in which he describes the apparatus used, records the phenomena observed, and states the conclusions in his own words, in each experiment.

GEOLOGY, $\frac{1}{2}$ UNIT.—In geology, a study of the following subjects should be made: rock-forming minerals, their names and chemical constituents; earthquakes—their cause and effects; volcanoes—distribution, types, character of eruption, nature of erupted material; supposed physical state of the earth's interior; surface agencies destructive to rocks, with brief illustrations; processes of re-construction with illustrations; rocks—classification, according to origin, rock fracture and dislocation, rock structure due to erosion, metamorphic rocks, mineral veins and their method of formation; conditions determining land sculpture; the geological periods, with land elevations, and the characteristics of climate, plant and animal life of each period.

PHYSIOGRAPHY, 1 UNIT.—This course should include a consideration of the earth as a globe, the atmosphere, the waters of the earth, the lands, life upon the earth, and the reactions between these elements. Special attention should be given to the questions of climate, the winds, the weather, tides, ocean currents, and to the effect of the ocean in modifying climatic conditions. Attention should be directed to the manner in which the land was originally formed and to the way in which the original formation has been and is being modified by the action of erosion, the winds, and frost. Thruout the course consideration should be given to the manner in which the various physical characteristics of the earth have affected life upon its surface.

PHYSIOLOGY, $\frac{1}{2}$ UNIT.—The text-book work should cover material equivalent to that of Martin's Human Body or Hough and Sedgwick's Human Mechanism. In addition the applicant should present a notebook, showing laboratory work on the elementary physiological processes and general structure of mammals.

ZOOLOGY, 1 UNIT.—The work should include: 1. The general natural history of a number of common vertebrates and invertebrates common to the locality where the work is given. 2. The classification of these forms into phylum, class and order, with the characteristics of the several groups. 3. The main anatomical features of one vertebrate, two arthropods (one an insect); an annelid, preferably the earthworm, a coelenterate, two protozoans (*Amœba* and *Paramœcium* recommended). 4. The general physiology of the above types involving digestion, absorption, circulation, excretion, and nerve function. These should be compared with the same functions in the human body. 5. The following subjects should be brought before the student in connection with the foregoing studies:

asexual and sexual reproduction, alternation of generations, regeneration, fertilization and segmentation of egg cells, adaptation, variations, evidences of relationship between similar groups, and the cell structure of animals.

Certified notebooks must be presented, which include notes upon work and discussion in classroom and drawings of the forms dissected.

History, 1 unit

See Group A.

Drawing, 1 unit

This may be either freehand or mechanical. If freehand drawing is offered, the candidate should submit at least fifteen drawings, the majority to be in pencil, certified as his work by the instructor. These should show ability to sketch from various objects with considerable accuracy of proportion and clearness of line, and a fair understanding of the rules of perspective and light and shade as applied in freehand sketching. A candidate may also present the equivalent of five hours per week for one year in elementary mechanical drawing, lettering, or sketching from models.

Domestic Science, 1-2 unit

In domestic science the student must present satisfactory evidence of knowledge in the following subjects: the use and care of the kitchen equipment, general cleaning processes, the marketable forms of staple foods. She must also show credit for at least twelve cooking laboratory lessons of two hours each.

Shop Practice, 1-2 unit

The candidate may offer carpentry or any of the various forms of benchwork given in a well-equipped manual training school, equivalent to five hours per week for one-half year.

Farm Practice, 1-2 unit

By "farm practice" is meant familiarity with the operations of the farm, such as the harnessing of teams, the use of tillage implements, and the care of dairy animals.

Degrees

The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 17-25. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satisfactory thesis in

applied or economic science, and upon passing examinations in the subjects pursued. Candidates not graduates of this college must file with the committee on graduate study, not later than October first, a detailed statement of their previous work, certified by the proper authorities. They must select, not later than November fifteenth, a major and a minor subject which must be closely related and have the approval of the committee on graduate study and of the professor in whose department the principal work is done. Major subjects may be selected in any of the following departments: agriculture; botany; chemistry; zoölogy; bacteriology; home economics; electrical, mechanical and civil engineering. The minor may be selected from undergraduate subjects outlined in the catalog; the major, however, must be advanced work specially arranged with the individual professor. The thesis must be typewritten, upon paper of the size and quality prescribed, and two copies must be in the hands of the president not later than June first.

The requirement for the degree of Mechanical Engineer, Electrical Engineer, Civil Engineer, or Master of Agriculture, consists of three years of successful professional practice subsequent to the Bachelor's degree, one of which must have been in a responsible position; the presentation of an acceptable thesis; and the passing of examinations upon the investigations involved in the thesis.

A fee of five dollars is charged for registration for an advanced degree. Students from outside the state pay a tuition fee of thirty dollars during the year of residence. The cost of a diploma is five dollars.

Teachers' Certificates

The following resolution adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island College will be received as evidence of the required qualifications in scholastic subjects for a teacher's certificate of the first grade." Arrangements are now being made, whereby R. I. State College graduates who have done all of the work in Psychology and Education shall be granted a teacher's certificate by the State Board of Education.

By action of the Regents of the State of New York, taken June 9, 1910, the degrees of B. S. and M. S. from this college are accepted as a basis for the issuance of licenses to teach in that state.

Expenses

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is \$15.00 a term, or \$30.00 a year. Students who apply for admission as non-residents will be expected to pay tuition, thruout their course unless there is a bona-fide change of residence of the parent or guardian.

The regular college expenses are tabulated as follows:

Board, \$3.75 per week	\$135 00
Room-rent, including heat and light	30 00
Incidental fee, \$4.50 per term	9 00
Student tax for Beacon, outside lectures, athletics, etc.	10 00
Laboratory expense, \$5 per term, estimated	10 00
Uniform for military drill, estimated	20 00
	\$214 00

The first four items must be paid quarterly in advance; that is to say, \$46.00 will be required at the opening of the year, September 18, 1916, and also at each of the following dates: November 20, 1916; February 12, 1917; and April 7, 1917. Non-residents of the State should add to this sum \$7.50 for tuition each quarter. In order to secure dormitory accommodations, the student is required to deposit \$7.50 with the application, the amount to be credited on the room rent for the first quarter. If the student fails to take the room, the deposit is forfeited. The uniform also must be paid for at the opening of the college year, in advance. The item of laboratory expense includes all material used in the various laboratories, and the destruction, breakage, or marring of apparatus and tools, and must be paid when bill is presented at the close of each term.

The probable cost of books will be from \$15.00 to \$30.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from \$10.00 to \$25.00. A fee of 50 cents will be charged for each second examination to make up a condition. Graduates pay the cost of diplomas, \$5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter.

UNIFORM.—Every able-bodied male college student is required to drill and to wear a uniform. The uniform must be paid for immediately on entering the college, when the students are measured for the suits. When worn only on drill and properly cared for, one uniform may last two or more years. The student may, however, wear his uniform all the time.

TRANSPORTATION.—The college conveys day-students to and from the railroad station free of charge. Once at the beginning and end of each term, trunks will be conveyed to and from the station for students living in dormitories under college control.

BOARDING STUDENTS.—The price of board for 1916-17 will be \$3.75 per week. Students who *leave regularly every week* on Friday afternoon and return Monday morning will receive a rebate for time of absence. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the holder of such ticket. After this ticket is issued, all charges for board will be made in accordance therewith, unless the student has the ticket changed by the bursar. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance.

DORMITORIES FOR MEN.—East Hall affords excellent accommodations for men students. The two upper floors are entirely devoted to rooms for students. The sanitary conveniences on each floor are excellent and ample, including a full complement of shower baths. The first floor contains a handsome social room for the men, two dining-rooms and kitchen fitted with all modern equipment. South Hall and Watson House are devoted to the use of the fraternities and afford very desirable rooms for dormitory purposes. Two houses in the village of Kingston are also hired by the college for fraternity dormitories. The Beta Phi fraternity has erected its own dormitory with capacity for twenty-five students.

DORMITORY FOR WOMEN.—During the summer of 1909 the interior of Davis Hall was entirely reconstructed. On the first floor are the administration offices and the office of the extension department. The upper floors of the building are utilized for the women's department. The accommodations for women students in this building are under careful supervision, and compare favorably with those at any women's college in the country. There is a neat hospital, with all necessary adjuncts. The oversight of the young women is

efficient, kindly, and painstaking. Attention is especially invited to the facilities and arrangements for the welfare of young women.

FURNITURE.—The rooms in the women's dormitory are provided with necessary furniture, including mattresses, but no other bedding material. *All students in the men's dormitory are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from \$8.00 to \$10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold when the student leaves, for one-half to three-fourths the original price. All students should bring with them such articles as sheets, blankets, pillow, pillow-slips (all for single bed), and towels. Men students are required to purchase mattresses at the college.

ROOMS IN THE VILLAGE.—Arrangements have been made for rooms in the village of Kingston, some of these being under college management and others in private houses. In the case of the former, room rent will vary from 60 cents to \$1.00 per week, with heat and light furnished, the student to provide other furnishings. Furnished rooms in private houses for students who occupy them throughout the college year range from \$1.25 to \$2.50 per week.

COLLEGE STORE.—Students will be required to pay cash at the store for all books and other supplies.

DAMAGE FUND.—All damage not due to ordinary wear will be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.
2. Students found guilty of such damage, but not acknowledging and settling for the damage will be charged double the cost of repair.
3. Students will be responsible for damage in their own rooms. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Religious Influences

This college is a state institution, and consequently, the widest latitude is given to all creeds and forms of religious belief. Simple assembly exercises are held on one day of each week and are conducted by the president or some other member of the faculty. It is required that students attend assembly.

A branch of the Intercollegiate Young Men's Christian Association is doing active work among the men students, holding a meeting weekly thruout the year. This association conducts courses in Bible study, and is taking the lead in endeavoring to establish sound and high ideas of college life.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and if possible, to join its membership. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

The College Lecture Association

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to introduce talented speakers upon subjects both entertaining and instructive. The association may be looked upon as a permanent and important factor in college activities.

Equipment

FARM AND CAMPUS.—The landed property of the college has a total area of 170 acres. About forty-one acres of this area are devoted to buildings, lawns, and athletic grounds; nine acres are in forest; and six are being developed as an arboretum. Thirty-five acres are used for the field investigations of the experiment station, which are valuable object lessons in agricultural instruction. The remainder is used for garden and orchard, and for raising crops for the live stock. The total value of land, buildings, and equipment is nearly \$400,000.

AGRICULTURAL BUILDINGS.—The agricultural buildings consist of a commodious dairy barn with laboratories for instruction in farm dairying and milk testing; a horse barn of modern construction; a greenhouse with an area of 10,000 square feet; a building attached to the greenhouse for class work in agronomy and horticulture, and a group of buildings used for instruction and experimentation in poultry raising.

ENGINEERING BUILDINGS.—The engineering department is equipped with modern machine, forge, and pattern-making shops,

located in a building known as Ladd Laboratory. In Lippitt Hall, a granite building, 134 by 40 feet, are housed the lecture rooms, drawing rooms, testing rooms, and engineering laboratories of the department. A boiler house and a dynamo room, from which heat, power, and light are furnished for the various buildings, are a part of the engineering outfit for practical instruction and for experimentation in electrical and steam engineering.

SCIENCE HALL.—This building was first occupied in October, 1913. It consists of three stories and a basement, measures 154 by 60 feet, and is built of native granite. Here are housed the departments of chemistry, physics, zoölogy, bacteriology, and botany. Each department is provided with commodious laboratories, recitation room, and department library room. An amphitheatre having a seating capacity of 150 and provided with suitable projection apparatus, serves for the common use of the various departments requiring such a room.

HOME ECONOMICS LABORATORIES.—The special laboratories of this department are located in South Hall and in a small building near it.

TAFT LABORATORY.—The laboratories and offices of the experiment station are housed in a granite building known as Taft Laboratory.

DORMITORIES.—East Hall is a stone building for men students. On the first floor are a social room, and a college commons with a seating capacity of 300. Davis Hall is also a stone building, the upper stories of which are used as a dormitory for women students, while the offices of administration are located on the first floor. South Hall and Watson House are small dormitories. The college also controls two small dormitories in the village of Kingston.

DRILL HALL AND ATHLETIC HOUSE.—The drill hall, a room 143 by 40 feet, located in Lippitt Hall, is used both as an armory and as a gymnasium. A dressing room and bath room are attached to the hall. An athletic house provided with bath and dressing rooms for out-of-door sports is located at the athletic field, which is equipped with cinder track and straightaway for track athletics. Tennis courts for both men and women are also provided.

The Library

The library occupies two large adjoining rooms in Lippitt Hall, and numbers over seventeen thousand volumes. The books are

arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a dictionary catalog gives author, title, and subject entries. As the library has been from the first intended for reference work, the various departments of instruction have made their selections with the greatest care. In the reading-room, one hundred and twenty of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

Since the library has been a government depository twenty-five hundred books and pamphlets have been received, which are of value in scientific investigation and research.

The library is open every week day from 8:00 A. M. to 6:00 P. M., with the exception of an hour at noon. The librarian or her representative is in constant attendance, to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the State are at liberty to use the library.

Location

The college campus is one and one-half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. The ride from Providence is about forty to forty-five minutes in length: From New York the time is some four hours.

Pictures of the college buildings are published in the Supplement to Volume XII, No. 1, which may be had by addressing the President of the college.

Telephone Calls

Except in cases of extreme emergency, the college office cannot undertake to call students to the telephone. Students boarding at the college may be reached over the pay-station telephone at East Hall, Narragansett Pier 9259—J, at 7:00 to 7:30 A. M., 12:00 to 12:30 P. M., and 6:00 to 6:30 P. M.

Departments of Instruction

The following subjects are offered in the different departments. All subjects in the departments of instruction preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture

PROFESSOR ADAMS, PROFESSOR COOLEY, PROFESSOR COBB, PROFESSOR RICKY, ASSISTANT PROFESSOR BURDICK, MR. GODIN

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work outlined above, all students registered for a degree in agriculture will be required to show certain familiarity with the ordinary operations of the farm, before such degree is given.

In order that those students who have not had an opportunity to receive training in the practical work of the farm may become familiar with some of the more common operations, they will be required, during their connection with the college, to do a certain amount of routine farm work without pay. This will include work in the dairy barn, poultry yard, greenhouses and gardens. This training will be in addition to the laboratory credits prescribed in the regular course. The amount of such work required will depend upon the efficiency shown by the student. No college credits will be given for this work, yet the neglect of this phase of the training may be considered a sufficient cause for dismissal from the institution. Students taking practical work upon farms during the summer vacations will be

required to furnish a certificate from their employers, stating the time spent on the farm and the kind and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is to elect during the Senior year.

AGRONOMY

PROFESSOR ADAMS, ASSISTANT PROFESSOR BURDICK

The instruction in agronomy may begin the first term of the Sophomore year, when a study is made of the forage plants. Following this work are subjects dealing with the other field crops and their uses as food for man and beast. In the work with soils and fertilizers, especial emphasis is placed upon the problems connected with the proper use of chemical manures.

The business side of farm life is given attention in the subjects treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment station, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery. A well-equipped blacksmith shop is also provided.

Students have the advantage of the field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects

II. Forage Crops.—History and development of the plants used for forage; silage, methods of construction of silos. *Two recitation credits per week, first term. Elective for Sophomores in Agriculture.*

III. Soils and Fertilizers.—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Four recitation and one and one-half*

laboratory credits per week, first term. Required of Juniors in Agriculture. Option for Juniors in Applied Science. Prerequisite: Chemistry I and II.

IV. Farm crops.—Origin and history; production and place in the rotation of clovers, grasses, and root crops. *Three recitation credits and one laboratory credit per week, second term. Required of Juniors in Agriculture. Option for Juniors in Applied Science. Prerequisite: Botany I and II.*

VI. Farm Machinery.—Development of farm machinery, methods of construction, function, and operation. *Two recitation credits and one laboratory credit per week, second term. Option for Juniors in Agriculture. Mr. Burdick.*

VII. Farm Management.—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming accounts. *Two recitation credits per week, second term. Required of Juniors in Agriculture. Prerequisite: Agronomy III and IV.*

VIII. Farm Management. (Advanced.)—Individual problems of farm management are assigned. Field trips are made for studying different types of farming. Problems in planning cropping systems and other management work. There will be at least two one-day field trips. *One recitation and two laboratory credits per week, second term. Elective for Seniors in Agriculture.*

IX. Literature.—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports on special topics. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.*

X. Agricultural Experimentation.—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits per week, first term. Required of Seniors in Agriculture.*

XI. Plant Breeding.—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Three recitation credits per week, first term. Required of Seniors in Agriculture. Option for Seniors in Applied Science. Prerequisite: Botany I and II.*

XII. Farm Accounting.—Aims and objects of farm accounts, farm inventories, single enterprise accounts, complete set of farm accounts and special records. Emphasis will be placed upon the interpretation of results as applied to the organization of a farm. *One recitation and one laboratory credit per week, first term. Elective for Seniors in Agriculture.*

A. Soils and Fertilizers.—An elementary course on the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Three recitation credits and one laboratory credit per week. Required of Short-Course students in Agriculture, first year.*

B. Crops and Rotations.—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various types of farms. *Three recitation credits and one and one-half laboratory credits per week, first term. Required of Short-Course students in Agriculture, second year.*

C. Farm Management.—An elementary course on the principles of farm management, equipment, cost of production. *Three recitation and one laboratory*

credit per week, second term. Required of Short-Course students in Agriculture, second year.

D. Farm Machinery.—Care and repair of farm implements. *One recitation and three laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year.* Assistant Professor Burdick.

ANIMAL HUSBANDRY

PROFESSOR COOLEY, PROFESSOR RICKEY, ASSISTANT PROFESSOR
BURDICK, MR. RODMAN

The subjects in animal husbandry are so arranged as to furnish practical as well as theoretical instruction in the selection, care and management of live stock on the farm. All students who graduate in agriculture are required to study breeds of stock, stock-judging, and veterinary practice. The student is taught how to select and care for farm animals. Students specializing in animal husbandry are offered advanced stock-judging, the principles of feeding, breeding, and the management of herds, flocks, and studs. Work in dairying is offered during the second term of the Junior year, and one who cares to specialize will find an elective throughout the Senior year.

Instruction in poultry culture is given during the Junior year, and is both practical and theoretical. During the same year an elective is offered in advanced poultry judging. The equipment in poultry is particularly strong. The college poultry plant enables the student to obtain a large amount of practical experience in incubation, brooding, feeding, and general management. In addition to the poultry stock in the college yards, students have the opportunity of following the investigations which are being conducted by the experiment station. An eight weeks' course in poultry keeping is offered also during the winter months, full information concerning which may be obtained by addressing the President of the college.

Subjects

I. Stock Judging.—Scoring and comparison of various types of horses, cattle, sheep and swine. Study of the special purpose or special type animal. *Two laboratory credits per week, second term. Required of Freshmen in Agriculture.* Professor Cooley.

II. Advanced Stock Judging.—A continuation of the work given in Animal Husbandry I in the judging of the various classes of farm animals. Tracing of pedigrees. Students chosen to represent the college in the annual stock judging

contest will be credited with this subject. *Two laboratory credits per week, second term. Elective for Juniors or Seniors in Agriculture.* Professor Cooley.

III. Breeds.—History and characteristics of the principal breeds of farm animals. A study of conditions to which each is adapted. *Two recitation credits per week, second term. Required of Freshmen in Agriculture.* Professor Cooley.

IV. Principles of Breeding.—A study of the science and art of breeding. Discussion of the laws of heredity as applied to improvement of animal types. *Three recitation credits per week, second term. Required of Seniors in Animal Husbandry. Option for Seniors in Applied Science. Elective for others. Prerequisite: Zoölogy III.* Professor Cooley.

V. Management of Dairy Cattle.—This course covers the field of milk production. It includes the building up of the dairy herd; the proper care of dairy cattle under different conditions; the dairy barn; special problems of feeding for milk production; advertising; fitting for sale and show ring. *Two recitation credits per week, first term. Elective for Seniors in Agriculture.* Professor Cooley.

VI. Feeds and Feeding.—Composition of feeds, principles of animal nutrition. Various methods of feeding farm animals. Balanced rations. Feeding standards. *Three recitation credits per week, second term. Required of Seniors in Animal Husbandry. Elective for Seniors in Horticulture and Applied Science. Prerequisite: Chemistry XIV.* Professor Cooley.

VII. Dairy Practice.—Lectures and laboratory practice in Babcock test and in handling milk and making butter on the farm. Herd testing methods. *One recitation and two laboratory credits per week, second term. Required of Juniors in Animal Husbandry. Elective for others.* Assistant Professor Burdick.

VIII. Dairy Practice.—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and two laboratory credits per week, thruout the year. Elective for Seniors in Agriculture.* Assistant Professor Burdick.

IX. Research and Literature.—*Hours to be arranged, first term. Elective for Seniors in Agriculture.* Professor Cooley.

X. Veterinary Practice.—Veterinary anatomy, materia medica, obstetrics, pathology. Combating disease from the farmer's standpoint. Injuries. *Three recitation credits per week, first term. Required of Juniors in Agriculture. Prerequisite: Zoölogy III.* Professor Cooley.

XI. Farm Buildings.—Plans, location, and estimate on the various farm buildings. *Two laboratory credits per week, second term. Elective for Seniors in Agriculture.* Mr. Rodman.

XIIa. Poultry Culture.—A study of all branches of poultry keeping. *One recitation credit per week, first term. Required of Juniors in Agriculture.* Professor Rickey.

XIIb. Poultry Keeping.—Laboratory work consisting of pen practice, incubation, brooding, killing and dressing. *Two laboratory credits per week, second term. Elective for Juniors in Agriculture.* Professor Rickey.

XIII. Judging Poultry.—Practice in judging standard poultry both by comparison and score card methods. *Two laboratory credits per week, first term. Elective for Seniors in Agriculture.* Professor Rickey.

XIV. Poultry Husbandry.—Study of poultry investigations and experimental work in various lines of poultry keeping. *At least two laboratory credits per week, throughout the year. Elective for Seniors in Agriculture and Applied Science, first term.* Professor Rickey.

XV. Management of Beef Cattle and Horses.—During the first nine weeks the course will cover practical methods of beef production. Studies will be made of successful practices in feeding for the market as well as advertising, fitting for sale and show ring, and the general care and management of beef cattle. During the last nine weeks, similar studies will be made in horse production, including market classes of horses, their production and utility, and successful methods of handling and training horses. *Two recitation credits per week, first term. Elective for Seniors in Agriculture.* Professor Cooley.

XVI. Management of Sheep and Swine.—During the first nine weeks the best systems of sheep husbandry will be studied. This will include rearing for mutton and wool; production of spring lambs; fattening sheep and lambs for market; general care and management of the breeding flock; advertising, fitting for sale and the show ring. During the last nine weeks similar studies will be made in pork production, including a study of foodstuffs with reference to their adaptability to pork production. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.* Professor Cooley.

A. Breeds.—Breeds of horses, cattle, sheep, and swine. Emphasis is placed on the type best fitted to the agriculture of New England. *Two recitation credits per week, throughout the year. Required of Short-Course students in Agriculture, first year.* Professor Cooley.

B. Stock Judging.—Judging of the various classes of animals and their adaptability to different purposes, as cattle for milk or beef production, horses for driving or draft. *Two laboratory credits per week, throughout the year. Required of Short-Course students in Agriculture, first year.* Professor Cooley.

C. Dairy Practice.—Babcock test for dairy products, production of sanitary milk, and butter making. *One recitation and three laboratory credits per week, first term. Required of Short-Course students in Agriculture, second year.* Assistant Professor Burdick.

D. Principles of Feeding.—Compounding rations. *Three recitation credits per week, first term. Required of Short-Course students in Agriculture, second year.* Professor Cooley.

E. Principles of Breeding.—A study of the selection of animals, heredity, and variation. *Two recitation credits and one laboratory credit per week, second term. Required of Short-Course students in Agriculture, second year.* Professor Cooley.

G. Care of Animals.—Housing, care, and management of farm animals. Practical directions for handling of stock on the farm. *Two recitation credits per week, first term. Required of Short-Course students in Agriculture, second year.* Professor Cooley.

H. Poultry Keeping.—Study, demonstrations, and work in all of the practical branches of the poultry department. *One recitation and two laboratory credits per week, throughout the year. Required of Short-Course students in Agriculture, first year.* Professor Rickey.

I. Farm Buildings.—A practical course in the planning of farm structures, estimating quantities of material required, and costs. *One and one-half laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year. Mr. Rodman.*

Bacteriology

PROFESSOR HADLEY

The instruction in bacteriology is arranged to meet the requirements of two classes of students:

1. In the first place the subject is presented in an elementary way for those whose main interest lies in other fields of work, but who at the same time desire a general knowledge of microorganisms and their relation to problems of human life, including agriculture, sanitation, foods, and the many problems of personal and public health and hygiene. For such students Bacteriology I is offered. It requires some familiarity with certain fundamental biological principles, an appreciation of which can be derived thru Zoölogy I or Botany I. For this reason one or the other of these subjects is made a prerequisite. Bacteriology I is taught by means of laboratory work supplemented by lectures and required reading.

2. In the second place the work in bacteriology is arranged to afford opportunity for specialization on the part of students in the Applied Science Course who anticipate entering some branch of applied bacteriology after graduation. Such specialization naturally looks forward to service in (1) the educational, (2) the commercial, (3) the municipal or (4) the research field, as exemplified by (1) college teaching, (2) private manufacturing laboratories of biologic products, (3) departments of public health (city or state), and (4) the State Agricultural Experiment Stations and other privately endowed institutions of research, respectively. For students desiring to specialize in any of these fields, Bacteriology II and III are offered. These subjects are not suited to and are not recommended for students who do not intend to specialize in bacteriology or in a closely allied subject. They must be preceded by advanced language work in German (German III), by other biological subjects which afford a foundation in anatomy (both gross and microscopic) and physiology; and, if possible, should be preceded or accompanied by physiological chemistry (Chemistry XIX).

In Bacteriology II, opportunity is offered to acquire advanced bacteriological technique. The subject is confined exclusively to laboratory work. In the second term of advanced bacteriology (Bacteriology III) the student is permitted to pursue individual work on selected problems, and opportunity is offered to become familiar with some of the methods of bacteriological research. This work may be outlined with special reference to the particular branch of bacteriology which the student plans to enter, as for instance, systematic, industrial, or pathogenic bacteriology. Bacteriology III involves laboratory work, required reading, and the discussion (seminar) of bacteriological theories and problems, and requires a minimum of ten hours attendance.

Subjects

1. General Bacteriology.—A subject designed to give the student a general knowledge of the bacteria. The first term's work involves a study of laboratory methods and technique, the isolation and determination of unknown species, etc. The work of the second term is designed to acquaint the student with the varied application of bacteriology to practical problems. It includes a study of the bacteriology of the air, water, soil, milk and other foods; the relation of bacteria to dairying, agronomy, hygiene and to the prevention, diagnosis and treatment of communicable diseases. Lectures and laboratory work. *Two laboratory credits and one recitation credit per week, thruout the year. Prerequisite: Botany I or Zoölogy I. Required of Seniors in Agriculture and Home Economics. Elective for Juniors and Seniors in other courses. The two terms must be taken continously.*

II. Advanced Bacteriological Technique.—A study of special methods employed in the investigation of bacteriological problems. The work includes the preparation of culture media, the bacteriological examination of air, shellfish and meats; a study of enzyme production by bacteria; of acid production; the relation of bacterial growth to oxygen supply; determination of thermal death point, of optimum reaction of medium, of resistance to drying, to light and to disinfectants; testing the germicidal power of unknown disinfectants; filtration; pathogenesis and virulence; experimental inoculation; post-mortem examinations, active immunization, passive immunization and the examination of the blood by histological, bacteriological and serological methods. *Four laboratory credits per week, first term. Prerequisites: (beginning 1917) Zoölogy VIII, and (beginning 1918) German III. Elective for Seniors who have passed with B grade in Bacteriology I.*

III. Bacteriological Theories and Problems.—Laboratory studies, assigned reading and discussions, planned to meet the needs of individual students who are specializing in bacteriological work. *One recitation credit and three laboratory credits per week, second term. Elective for Seniors who have passed with credit in Bacteriology II.*

Botany

PROFESSOR MERROW, MR. SPENCER

The aim of the department is to give a general knowledge of plant life, followed by subjects of an economic nature. The college is well located for carrying on this line of work. The native flora is extensive, and an abundance of material is furnished by the cultivated plants of the gardens and fields of the college farm. The green houses supply fresh material for winter use, and the herbarium of 6,000 specimens is a useful reference collection. The laboratory is equipped with dissecting and compound microscopes, a microtome, paraffin bath, and simple physiological apparatus. Charts and models are provided for lecture demonstrations. A good working library, including several botanical periodicals, is an important factor in the outfit for instruction.

Subjects

I. General Botany.—A study of common plants, their structure, physiology, evolution, and adaptation to environment. *Two laboratory credits and one recitation credit per week, thruout the year. Required of Freshmen in Agriculture, Applied Science, and Home Economics.* Professor Merrow, Mr. Spencer.

II. Botany of crops and weeds.—*Two laboratory credits and one recitation credit per week, first term. Required of Sophomores in Agriculture and Applied Science.* Professor Merrow.

III. Trees and shrubs.—The determination of native and introduced trees and shrubs in summer and winter condition. *One laboratory or field credit per week, thruout the year. Option for Seniors in Applied Science.* Mr. Spencer.

IV. Forestry.—The management of New England wood lots. *Two credits per week, second term. Given in alternate years, 1916, 1918. Option for Juniors or Seniors in Agriculture and Applied Science.* Mr. Spencer.

V. Histology.—Seed plants are studied by the usual histological methods of imbedding, sectioning, and staining. *Four laboratory credits and one recitation credit per week, first term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.* Professor Merrow.

VI. Pathology.—Diseases caused by parasitic fungi and the remedies for them. *Four laboratory credits and one recitation credit per week, second term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.* Professor Merrow.

VII. Assigned Work.—*Three credits thruout the year. Elective for Seniors in Applied Science and Agriculture.* Professor Merrow.

A. Plant Life.—Elementary agricultural botany. *Two and a half laboratory credits and one recitation credit per week, thruout the year. Required of Short-Course students in Agriculture, first year.* Mr. Spencer.

Chemistry

PROFESSOR LEIGHTON, ASSISTANT PROFESSOR SMITH, PROFESSOR HARTWELL, MR. PERKINS

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. The work is designed to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including the principal technical processes, and a brief account of the carbon compounds. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Two periods per week for the first half-year and three for the second half-year are devoted to the lectures and recitations, and three hours per week for a half-year to the practical work in the laboratory, where the student has an opportunity to verify some of the chemical theories and to become familiar with substances and their chemical behavior. During the second half of this year the laboratory period is devoted to qualitative analysis, which continues through the first half of the Sophomore year. The subject is taught in part by means of recitations and lectures, but mainly by work in the laboratory. Students are required to complete a systematic course in basic and acid analysis, and to analyze correctly a number of alloys, salts, and minerals.

Quantitative analysis is taught mainly by laboratory practice, but sufficient time is devoted to lectures and recitations to teach thoroughly the fundamental principles involved. The work comprises gravimetric and volumetric analysis, and the quantitative determination of salts, alloys, ores, minerals, and commercial and food products. Determinative mineralogy, which includes blow-pipe analysis and crystallography, is taught by recitations and laboratory work. The student learns the physical properties of the common minerals, and their identification. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such theoretical and practical knowledge as to prepare him for analytical work of any kind.

The study of organic chemistry begins with a short course, designed to cover the general principles and methods, and to include a description of the more important compounds. The subject is continued by those who wish to specialize in chemistry in a more extended course covering the aromatic series and the chemistry of

the dyestuffs, and accompanied by laboratory work in organic preparations and analysis. The theoretical and basic principles of chemistry, with their general application, are thoroly studied by recitation, lectures, and laboratory work in the course in physical chemistry.

The descriptive side of industrial chemistry, which comprises a general survey of the technical applications of chemical principles to the arts and industries, is studied by recitation work; while practical technical operations, such as textile coloring, suited to the needs of the individual student, are studied by laboratory practice.

Agricultural chemistry, required of agricultural students in the Sophomore year, embodies the chemistry of soils and fertilizers, also the chemistry involved in the changes which take place during the growth of animals and plants, as well as in the storage or manufacture of the ordinary farm products.

Subject XXI is intended to familiarize the student with the general field of chemical literature, and to inculcate the habit of keeping up with the recent advance in chemical science by reports and discussion of articles appearing in the chemical journals. This course is preparatory for Subject XX, which involves original investigation.

The laboratory occupies the first floor and a part of the basement of the new Science Hall, seventeen rooms altogether, including a large general laboratory, organic and analytical laboratories, weighing room, library, large lecture room, recitation room, two offices, store rooms and supply room. It is well equipped with apparatus and consulting library for teaching the subjects mentioned below.

Subjects

I. General Chemistry.—*Two recitation and one and one-half laboratory credits per week, first term. Required of Freshmen in all courses.* Assistant Professor Smith, Mr. Perkins.

II. General Chemistry and Qualitative Analysis.—*Three recitation and one and one-half laboratory credits per week, second term. Required of Freshmen in all courses.* Professor Leighton, Assistant Professor Smith, Mr. Perkins.

III. Qualitative Analysis.—Basic and acid analysis; analysis of salts, industrial and natural products. *Three laboratory credits per week, first term. Required of Sophomores in Electrical and Civil Engineering.* Professor Leighton, Mr. Perkins.

III a. Qualitative Analysis.—Basic and acid analysis; analysis of salts, industrial and natural products. *Three laboratory and one recitation credits per week, second term. Required of Sophomores in Chemical Engineering, Home Economics and Applied Science.* Professor Leighton, Mr. Perkins.

IV. Organic Chemistry.—*Three recitation credits and one laboratory credit per week, first term. Required of Sophomores in Chemical Engineering, Home Economics, Agriculture, and Applied Science. Elective for others who have completed Chemistry III. Assistant Professor Smith.*

V. Organic Chemistry (advanced).—*To be given alternate years. Given next in 1918. Four recitation credits per week, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Leighton.*

VI. Organic Chemical Laboratory.—*Three laboratory credits per week, second term. Required of Seniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Assistant Professor Smith.*

VII. Quantitative Analysis.—*Gravimetric and volumetric analysis. Analysis of minerals, ores, alloys, and industrial products. Three laboratory credits per week, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Assistant Professor Smith.*

VIII. Quantitative Analysis.—*Four and one-half laboratory credits per week, second term, Junior year, and three laboratory credits per week, first term, Senior year. Required of students in Chemical Engineering, both terms. Required of students who take the Chemical Option in Applied Science, second term, Junior year. Elective for those who have completed Chemistry III. Assistant Professor Smith.*

X. Quantitative Analysis.—*Food Analysis.—To be given alternate years; given next in 1918. Four laboratory credits, second term. Required of Seniors and Juniors in Home Economics. Elective for others who have completed Chemistry IV. Assistant Professor Smith.*

XI. Determinative Mineralogy.—*One and one-half laboratory credits per week, second term. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Mr. Perkins.*

XII. Physical Chemistry.—*To be given alternate years. Given next in 1917. Four recitation credits and one laboratory credit per week, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Professor Leighton.*

XIV. Agricultural Chemistry.—*Four recitation credits per week, second term. Required of Sophomores in Agriculture. Prerequisite: Chemistry I, II and IV. Professor Hartwell.*

XV. Gas Analysis.—*See Mechanical Engineering XV.*

XVI. Industrial Chemistry.—*Four recitation credits per week, first term. Required of Juniors in Chemical Engineering and of Juniors who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Leighton.*

XVII. Industrial Chemistry.—*The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis and textile coloring. Four laboratory credits per week, first term. Required of*

Seniors in Chemical Engineering and of Seniors who take the Chemical Option in Applied Science. Professor Leighton.

XIX. Physiological Chemistry.—To be given alternate years. Given next in 1917. *Four credits per week, second term. Required of Seniors and Juniors in Home Economics.* Assistant Professor Smith.

XX. Assigned Work.—*Three credits per week, thruout the year. Required of Seniors in Chemical Engineering and Seniors who take the Chemical Option in Applied Science.* Professor Leighton.

XXI. Reports and Discussion of Chemical Subjects and Recent Investigations.—*One credit per week, thruout the year; required of Juniors and Seniors in Chemical Engineering; and of Juniors and Seniors taking the Chemical Option in Applied Science.* Professor Leighton.

A. Chemistry of Plant and Animal Life.—*Three recitation credits and one and one-half laboratory credits per week, thruout the year. Required of Short-Course students in Agriculture, first year.* Mr. Perkins.

Drawing,—Freehand

MISS ELDRED

The aim of the subjects described below is to supply the practice in drawing necessary for subsequent work in the science laboratories, to give an elementary knowledge of the history of art, and to develop some appreciation of the beautiful in art and nature. For the first term, the work comprises outline drawing in pencil mainly from plant and animal forms. The work of the second term includes some consideration of perspective and of the principles of design. In the first term of the Sophomore year the home economics students consider the subject of color,—the principles of color harmony, and the use of color in design and decoration. The object of this work is to develop appreciation of color and to enable the student to exercise a more intelligent and sensitive discrimination in its use. In the Junior year, special work is arranged for the first term to accompany and illustrate the home economics course, treating of the arrangement and decoration of the house. The brief course in the history of art aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. The department has a considerable equipment of illustrative material for this work, including a collection of about one hundred and fifty casts and over three hundred photographs of folio or larger size, with many smaller prints, among them two thousand University Prints, illustrating Greek and Roman sculpture, and the art of Italy, Germany, and the Netherlands.

Subjects

II. Pencil Drawing from Objects.—*One laboratory credit per week, first term. Required of Freshmen in Agriculture. One laboratory credit per week, thruout the year. Required of Freshmen in Applied Science and Home Economics. Five laboratory credits per week, first term. Elective for Freshmen.*

III. History of Art.—*Two recitation credits per week, second term. Required of Juniors in Home Economics. Two recitation credits per week, first term. Required of Seniors in Home Economics.*

IV. Color Problems.—*One laboratory credit per week, first term. Required of Sophomores in Home Economics.*

V. Drawing in Charcoal from Still Life and the Cast.—*Two laboratory credits per week, second term. Elective.*

VI. Pen-and-ink Drawing, Water-Color, or Pastel.—*Two laboratory credits per week, second term. Elective.*

VII. Modeling.—*Two laboratory credits per week, second term. Elective.*

VIII. Work Illustrating Home Economics VII.—*One laboratory credit per week second term. Required of Juniors in Home Economics.*

IX. History of American Art.—*One recitation credit per week, second term. Elective.*

X. Modern European Art.—*One or two recitation credits per week, second term. Elective.*

Economic and Social Science

PRESIDENT EDWARDS

Subjects

I. Political Economy.—Text-book, supplemented by lectures, reading, and essays. *Four recitation credits per week, first term, first twelve weeks. Required of Seniors in all courses.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.*

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmers, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations; federation of rural social forces. *Elective.*

Engineering,—Chemical

PROFESSOR LEIGHTON, ASSISTANT PROFESSOR SMITH, MR. PERKINS

The course in chemical engineering is based upon the principles of chemistry and of mechanical and electrical engineering. It is designed to prepare men for those industries in which chemical processes play a vital part. The subjects in chemistry aim to train the student thoroly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the various branches of chemical analysis, and to make him familiar with the practical applications of chemistry. The subjects in mathematics, physics, mechanical and electrical engineering aim to give the training necessary to solve the mechanical and electrical problems that present themselves when chemistry is applied to the industries.

While the primary purpose is to turn out men well equipped to take up any line of chemical engineering, yet, owing to the important textile interests in this state, and the increasing importance of the manufacture of chemicals and dyestuffs, especial emphasis is placed on the manufacture and application of dyes. The following are some of the industries which offer opportunities to the chemist and the chemical engineer:—The manufacture of chemicals and dyestuffs; the bleaching and dyeing of cotton, wool, and silk; the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, sugar, paper pulp, paper, soap, paint and varnish; the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion, or destructive distillation to form gas, coke, and tar, embracing further the whole field of forest products utilization; and the processes of water and sewage purification.

A detailed description of the subjects will be found under their respective departments.

Engineering,—Civil

PROFESSOR WEBSTER, MR. MERRILL

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various

fields of civil engineering. With this object in view, application of the theories and principles learned in the classroom is made in the field, laboratory, and drafting room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the student's opportunities, the name of the department has been changed from Highway Engineering to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance of highway engineering in this state and thruout the country in general, considerable emphasis is still placed on this phase of engineering work.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and testing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects.

Subjects

I. Surveying.—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level, and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits per week, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering, and in Agriculture.*

II. Topographic Surveying.—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits per week, second term. Required of Sophomores in Civil Engineering.*

III a. Railroad Engineering.—The work consists of a reconnoissance, a preliminary and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates are made. A study is also made of the properties of curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Five credits per week, divided between field and recitation as seems advisable, first term. Required of Juniors in Civil Engineering.*

III b. Railroad Engineering.—The principles of economic railroad construction and maintenance; railway appliances, ballast, and roadbed, culverts and trestles, turnouts, sidings, yards, terminals, signaling, locomotive and grade problems, betterment surveys, etc. *Three recitation credits per week, second term. Required of Juniors in Civil Engineering.*

IV. Graphic Statics.—Instruction is given in graphic statics and its application in the design of simple framed structures. *Two recitation credits per week, first term. Required of Juniors in Civil Engineering.*

V. Roads and Pavements.—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction and maintenance of earth, gravel, and macadam roads, together with a discussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the construction of a gravel or macadam road on the college grounds. *Three recitation credits and one field credit per week, second term. Required of Juniors in Civil Engineering.*

VI. Bridge Details.—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *Two laboratory credits per week, first term. Required of Seniors in Civil Engineering.*

VII. Bridge Analysis.—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*

VIII. Bridge Design.—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits per week, second term. Required of Seniors in Civil Engineering.*

IX. Masonry Construction.—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and a systematic and thoro laboratory course on cement testing is given. *Two recitation credits and one laboratory credit per week, first term. Required of Seniors in Civil Engineering.*

X. Reinforced Concrete.—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XI. Sewerage.—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers; removal of house sewage; the design and construction of sewers and method of sewage disposal. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of waterworks, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XIII. Tunneling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit per week, second term. Required of Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XV. Assigned Work.—With the advice and consent of the head of the department, the student elects three hours' work in the Senior year. This may be research, thesis, or recitation and laboratory work, depending upon the qualifications of the student. *Three credits per week, throughout the year. Required of Seniors in Civil Engineering.*

XVI. Vacation Reading.—Systematic reading during vacations on some topic assigned by the head of this department.

XVII. Metal Structures.—The graphical determination of stresses in steel mill buildings. *One laboratory credit per week, second term. Elective for Seniors in Civil Engineering.*

XVIII. Irrigation Engineering.—This includes a study of the impounding, diverting, flow, and measurement of water, quantity required, canals, canal works, storage reservoirs, waterways, etc. *Three recitation credits per week, first term. Elective for Seniors in Civil Engineering.*

Engineering,—Electrical

PROFESSOR DICKINSON

The aim of the course in electrical engineering is to give the student such training in the fundamental principles of the subject as will fit him to take up, in an intelligent and effective manner, any line of engineering work requiring special electrical knowledge. Instruction is given in both classroom and laboratory, the aim of each method of instruction being to supplement the other, and to develop resourcefulness and the habit of independent thought on the part of the student.

Subjects

I. Theory of Direct Currents.—A detailed study of the theory of direct-current apparatus. The theory of dynamos, motors, and auxiliary apparatus. *Three recitation credits per week, first term. Required of Juniors in Electrical Engineering and of Seniors in Chemical and Mechanical Engineering.*

II. Direct-Current Laboratory.—A course consisting of tests of various types of direct-current apparatus. These include magnetization and characteristic curves of different types of machines, as well as tests for efficiency, regulation, temperature rise, and tests of a similar nature. *Three laboratory credits per week, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

III a. Principles of Electrical Engineering.—A course designed to emphasize the fundamental laws of electric and magnetic circuits. Special attention is given to the units employed, and to methods of measurement. Inductance and capacity are studied at considerable length, and their effects in circuits of variable E. M. F. is discussed. *One recitation credit per week for the last nine weeks of second term, Sophomore year; and one recitation credit per week for eighteen weeks, first term, Junior year. Required of students in Electrical Engineering.*

IV. Theory of Alternating Currents.—Recitations and lectures. The elements of the theory of alternating currents and of alternating-current machinery. This course includes the simpler theories regarding the action of A. C. dynamos, motors, converters, and transformers. *Two recitation credits per week, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

V. Theory of Alternating Currents.—Recitations and lectures, continuing subject IV. The more advanced theories regarding the effect of inductance and capacity in A. C. circuits, and of the action of A. C. machinery, are discussed. Assigned readings and reports are a feature of the subject. *Three recitation credits per week, thruout the year. Required of Seniors in Electrical Engineering.*

VI. Alternating-Current Laboratory.—A course consisting of tests of different types of alternating-current apparatus, such as single and polyphase generators and motors, induction motors, converters, and transformers. *Three laboratory credits per week, thruout the year. Required of Seniors in Electrical Engineering.*

VII. Design of Electrical Machinery.—General principles of the design of electrical apparatus, including a direct and an alternating current generator. *Three laboratory credits per week, second term. Required of Seniors in Electrical Engineering.*

VIII. Telephone Engineering.—A consideration of the development of the modern telephone, with special reference to the common battery systems. *One recitation credit per week, first term. Required of Seniors in Electrical Engineering.*

X. Transmission of Energy.—A study of systems of high-tension distribution, the effect of capacity and inductance, the construction of lines, their protection, and the troubles developing in high-tension work. *Two recitation credits per week, first term. Required of Seniors in Electrical Engineering.*

XI. Electric Railway Engineering.—A discussion of the economic considerations in the development of an electric railway, methods of construction, the location of the generating station, the design of the distributing system, types of motors, and systems of control. *Two recitation credits per week, second term. Required of Seniors in Electrical Engineering.*

XII. Assigned Work.—Members of the senior class are required to prepare and to present before the class, papers and discussions upon topics of interest to engineers. As a rule, each student presents about eight papers in the course of the year's work. *Three laboratory credits per week, thruout the year. Required of Seniors in Electrical Engineering.*

Engineering,—Mechanical

PROFESSOR WALES, MR. ELDRED, MR. BEAMENSDEFER, MR. MERRILL

It is the object of the work in the department of mechanical engineering to turn out broad-gauged, self-dependent men, well trained in engineering theory, familiar with the practical matters of construction and operation, and having some knowledge of the economic relations which the engineer and industrial development bear to modern society. In the endeavor to train men who will touch life, not at one point, but at many, the work of the department is supplemented and rounded out by extended and vigorous courses along the lines of electrical engineering, physics, mathematics, chemistry, English, history, modern languages, and political economy. The special work of the department of mechanical engineering divides itself naturally into the following general groups: shop practice, design, steam engineering, and experimental engineering. Each of the above groups is amplified and briefly described below:

SHOP PRACTICE

The object of this work is to give familiarity with principles, operations, possibilities, and management, rather than to develop the greatest dexterity in manipulation. Shop practice extends over three years of the course, and comprises forging and foundry work, pattern making, and machine-tool operation. The shops are exceptionally well equipped with machines and tools of all kinds. In the machine shop are six metal lathes, speed lathes, planes, 16-in. shaper, two drills, two tool grinders, drill grinder, milling machine, punching-press, vertical boring and turning mill, together with the usual assortment of tools and auxiliaries. The pattern shop is provided with lathes, circular saw, band saw, jig saw, dowel machine, surface and buzz planers, etc. Fifteen work-benches fully provided with the small tools of the pattern maker complete the equipment. The forge shop is equipped with the usual anvils, forges, fullers, swages, hardies, etc., while a full stock of patterns, shovels, riddles, flasks,

and trowels is provided for the work in foundry practice. Enthusiasm is given to the work by the construction of things of real value—a new machine for the shop or a piece of apparatus for the laboratory—instead of spending the whole time on worthless “exercises.”

DESIGN

The work along the lines of design extends thruout the four years, beginning with freehand and mechanical drawing and ending with machine design and power-plant design in the Senior year. Leading up to this final work are the terms of mechanical drawing, descriptive geometry, mechanism, valve gears, dynamics of machines, mechanics, strength of materials, hydraulics, and thermo-dynamics. All the forces of correct theory and the practice of the most successful builders are brought to bear upon the solution of definite, practical problems.

STEAM ENGINEERING

Steam engineering begins in the Junior year and runs thru the remainder of the course. A rigorous study of the mathematical theory of thermo-dynamics supplies the foundation for the study of boilers and engines, design and economy, and the various devices and auxiliaries of the power plant. In the Senior year is considered the particular branch of heating and ventilating. In this year, also, the subject of power plants is taken up, which applies all the previous training in steam engineering, and which brings together and unifies all allied subjects.

EXPERIMENTAL ENGINEERING

This subject, which extends thruout the Junior and Senior years, is intended to fix the theory developed in all the other lines of work. Instruction is given by means of lectures and laboratory tests. The student becomes familiar with the theory, construction, use, and calibration of the instruments and apparatus used by the engineer, and gains experience in making accurate standard and special tests. The work is divided into four groups: one dealing with the chemical problems of engineering—testing of gases, oils, fuels, feed water, etc.; a second, with general calibration and testing; a third, with the study and tests of structural materials; and the fourth, with general power-plant testing. In power-plant testing the students make the necessary plans and preparations, perform the

experimental work, and prepare formal reports, with recommendations for improvement in economy, etc. These tests are made not only on the college power-plants, but on those of manufacturing establishments of the State. The equipment for experimental work comprises several boilers and steam engines, large steam pump, gas engines, feed-water heaters, several steam and gas engine indicators, steam calorimeters, tanks, scales, injectors, water turbine, hydraulic ram, pulsometer, centrifugal pump, belt pump, weirs, two-stage air compressor, air-brake outfit, meters, gauges, 50,000-lb. tension and compression machine, apparatus for oil and gas testing, fuel calorimeter, complete outfit for testing cements and concretes, etc. Thruout the work the greatest stress is laid upon the correct calculation and interpretation of results, and accuracy and self-dependence are developed to the fullest.

Subjects

I. Mechanical Drawing.—Lettering, freehand sketching, use of drafting tools, geometrical problems, projections, machine parts. *Three laboratory credits per week, first term; two laboratory credits per week, second term. Required of Freshmen in Engineering.* Mr. Beamensderfer and Mr. Merrill.

II. Forge and Foundry.—Forging, drawing, bending, welding, etc. Principles of moulding, core making, and casting. *Three laboratory credits per week, first term. Required of Freshmen in Engineering.* Mr. Eldred.

III. Pattern Making.—Use of tools, bench and lathe work, pattern making. *Three laboratory credits per week, second term. Required of Freshmen in Engineering.* Mr. Eldred.

IV. Graphic Statics.—Force and funicula polygons with applications in the determination of stresses in framed structures. *Two recitation credits per week, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.* Mr. Beamensderfer.

V. Descriptive Geometry.—Elementary principles; problems relating to the point, line, plane, cylinder and double curved surfaces of revolution, intersections, and developments. *One recitation and two laboratory credits per week, first term. Required of all Sophomores in Engineering.* Mr. Beamensderfer.

VI. Mechanical Drawing.—Detail and assembly drawings, elementary machine design. *Three laboratory credits per week, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.* Mr. Beamensderfer.

VII. Machine Shop.—Hand work in chipping and filing, use of machine tools, construction of machines. *Three laboratory credits per week, second term. Required of Sophomores in Electrical Engineering. One and one-half laboratory credits per week, second term. Required of Sophomores in Civil Engineering.* Mr. Eldred.

VIII. Machine Drafting.—Technique of machine drafting, application of kinematics to the design of gears, valves, linkages, quick-return motions, etc. *Three laboratory credits per week, first term. Required of Juniors in Mechanical Engineering.* Mr. Beamensderfer.

IX. Heat Engineering.—Thermo-dynamics —Mathematical development and discussion of the laws of thermo-dynamics, and their application to perfect gases, saturated and superheated steam. Theory of air compressors, pneumatic machinery, hot-air engines, gas engines, and refrigerating machines. Boilers, engines, engine economy, effect of cylinder walls, compounding, superheating, use of jackets, varying cut-off, speed, pressure, etc. Flow of fluids, injectors, and thermo-dynamic principles applied to the steam turbine. *Three recitation credits per week, thruout the year. Required of Juniors in Mechanical and Electrical Engineering; and for twenty-seven weeks, of Juniors in Chemical Engineering.* Professor Wales.

X. Applied Mechanics.—Forces, composition and resolution, parallel forces, moments, couples, centres of gravity, velocity, acceleration, energy and momentum, falling bodies and projectiles, centrifugal force, moment of inertia, radius of gyration, angular momentum, energy of rotating bodies, impact, etc. Strength of materials, stresses in structures, riveted joints, beam theory, struts, columns, shafting, springs, etc. Solution of practical problems. Text, Lanza's Applied Mechanics. *Five recitation credits per week for twenty-four weeks. Required of all Juniors in Engineering.* Professor Wales.

XI. Hydraulics.—General principles, head and pressure, center of pressure, velocity of discharge, flow through orifices and over weirs, Bernouilli's theorem, flow through pipes, flow through conduits and canals, energy of flow, horse-power, hydraulic machinery, rams, turbines, centrifugal pumps, and Pelton wheels. Merriman's Treatise on Hydraulics. *Five recitation credits per week, for last twelve weeks of second term. Required of all Juniors in Engineering.* Professor Wales.

XII. Mechanism.—Instantaneous centers, centroids, lobed wheels, belts, pulleys, four-bar linkages, graphical determination of velocity ratios, quick-return motions, straight-line motions, pantographs, trains of gears, epicyclic trains, tooth gearing, epicycloidal and involute teeth, bevel wheels, etc. Schwamb and Merrill's Mechanism. *Three recitation credits per week, second term. Required of Sophomores in Mechanical and in Chemical Engineering.* Mr. Beamensderfer.

XIII. Valve Gears and Dynamics.—Plane slide valves, piston valves, riding cut-off valves; Joy and Marshall gears; Stephenson, Gooch, and Walsheart link motions; drop cut-off valves; Corliss, Brown, and Putnam valves. Peabody's Valve Gears. Lectures and references. *Three recitation credits per week, second term. Required of Juniors in Mechanical Engineering.* Mr. Beamensderfer.

XIV. Machine Shop.—Advanced work in machine construction. *Three laboratory credits per week, thruout the year. Required of Juniors in Mechanical Engineering.* Mr. Eldred.

XV. Experimental Engineering a.—Lectures and laboratory work in gases, oils, and fuels; flue-gas analysis, calculation of air per pound of coal, loss due to excess air and to imperfect combustion; analysis of fuel gases and calcula-

tion of heating values; determination of heating values by the Junkers and Parr calorimeters; study of gases in producer and gas-engine work. Analysis of coal and other fuels. Analysis and testing of lubricating and fuel oils. Testing of boiler waters. *Two laboratory credits, first term. Required of Juniors in Mechanical and Electrical Engineering, and Seniors in Chemical Engineering.* Professor Wales.

XVI. Experimental Engineering b.—General calibration and testing of engineering instruments and apparatus; gauges; planimeter; manometers; indicators; Prony brakes; scales; valve setting by measurement and by the indicator; Carpenter calorimeter; Peabody calorimeter; flow through orifices; weirs; nozzles; Pitot tube; meters; Venturi meters; hydraulic ram; turbine, etc. *Two laboratory credits per week, second term. Required of Juniors in Mechanical, Electrical and Civil Engineering.* Mr. Beamensderfer.

XVII. Experimental Engineering c.—Properties of materials. Lectures on the metallurgy of iron and steel; effects of impurities; cold-working; repeated stresses; tensile, compressive, and shearing strengths; ductility; resilience, etc.; copper, brass, bronze, and other alloys; timber, stone, and brick. The manufacture of natural and Portland cements; effects of over-and under-burning, overliming, SO_3 , etc.; discussion of tests and their interpretation. Laboratory work is parallel with lectures. Tensile strengths of cast-iron, wrought-iron, and steel; compressive strength of metals, timber, concrete, cement; shearing tests of metals; transverse tests of timber and iron; stress-strain diagram, elastic limit, yield point, modulus of rupture; tensile tests of cement; pat tests, boiling tests; specific gravity; fineness; time of set, etc. Determination of the best proportions of cement, sand, and rock of given characteristics. *Two lecture and two laboratory credits per week, first term. Required of Seniors in Mechanical, Electrical, and Civil Engineering.* Professor Wales and Mr. Beamensderfer.

XVIII. Experimental Engineering d.—Hot-air engine, gas engine, steam pump, injectors, transmission dynamometers; boiler tests; complete tests of power plants; outside work on the H. P. of a stream, with tests of hydraulic power plant; outside tests of manufacturing plants, with calculations, reports, and recommendations. *Two laboratory credits per week, second term. Required of Seniors in Mechanical and Civil Engineering.* Professor Wales.

XIX. Heating and Ventilation.—Discussion of the principles and practice of the various systems of heating and ventilating—direct and indirect, hot-air hot-water, pressure steam, exhaust steam, vacuum systems, fans, blowers; calculation of ventilation and radiation; flues, pipes, and radiators; air troubles; central heating systems with central power plants; design of heating system for a given building. *One recitation credit per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XX. Machine Design.—Design of machine parts from considerations of the motions involved, strength, rigidity, and friction; design of a complete machine; calculations with design of some type of engine, starting with given requirement of H. P., speed, etc., and with an assumed theoretical indicator card. *Three laboratory credits per week thruout the year. Required of Seniors in Mechanical Engineering.* Mr. Beamensderfer.

XXI. Power Plants and Power-Plant Design.—Study of the various types—as to choice, location, installation, and operation; prime movers, their accessories and auxiliaries.

Steam Plants.—Study of the effects on economy, range, and reliability of simple or compound, condensing or non-condensing engines with various valve gears, throttling and cut-off governors, different boiler installations, feed-water heaters, economizers, pressure regulators, pumps, injectors, mechanical stokers, forced and induced draft, chimneys, etc.; calculations of proper sizes, powers, and strengths of machines and apparatus of the power plant; methods of improving economy. The place of the steam turbine in power-plant work.

Hydro Plants.—Discussion of the types of hydraulic machinery, their efficiency, and the particular conditions to which each is best adapted. This will be a development of the previous work in hydraulics to meet the need of the power engineer.

Gas-Producer Plants.—The different suction and pressure producers, theory, capacity, future, etc.; gas engines, from both the thermo-dynamic and the mechanical points of view. *Two lecture credits and one laboratory credit per week, first term. Required of Seniors in Mechanical Engineering. Two lecture credits per week, first term. Required of Seniors in Electrical Engineering.* Professor Wales.

XXII. Assigned Work.—This may be of the nature of research or of specialized study along some particular line of engineering. Options are offered in theory of elasticity, advanced hydraulics, etc. *Three credits per week, thruout the year. Required of Seniors in Mechanical Engineering.*

XXIII. Dynamics of Machines.—Analysis of stresses, effects of inertia, balance, reciprocating parts, flywheels, design of high-speed engines and machinery. *Two recitation credits per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XXIV. Works Management.—The economics of the shop and factory, cost-keeping, efficiency in production. *One lecture credit per week, second term. Required of Seniors in Mechanical and Chemical Engineering.* Professor Wales.

XXV. Elements of Thermo-dynamics.—A non-mathematical discussion of boilers, engines, pumps, and power apparatus for civil engineers. *Three recitation credits per week, first term. Required of Juniors in Civil Engineering.* Mr. Merrill.

XXVI. Industrial Organization and Management.—The organization of engineering industries, and the laws and methods of business applying to them. *Three lecture credits per week, first term. Required of Sophomores in Mechanical Engineering.* Professor Wales.

English

Composition, Rhetoric, and Literature

PROFESSOR BOARDMAN, PROFESSOR CHURCHILL, MISS PECK

The English department offers subjects in literature and in rhetoric and composition, both written and oral. The required work extends

over the four years. Elective subjects in literature are provided for Juniors and Seniors. Both literature and composition subjects place emphasis on the practical and the contemporary phases of the work.

The library is an important factor in the work of the department, as it contains some twelve hundred volumes of representative English and American literature.

Subjects in Literature

PROFESSOR BOARDMAN

IV. Modern Essays.—Study of representative essays of England and America in the 19th and 20th centuries. *Four recitation credits per week, first term. Required of Juniors in all courses.*

V. Shakspeare.—A course in appreciation, including lectures on the life of Shakspeare, reading of several plays, and careful study of three plays. *Four recitation credits per week, last twelve weeks of the second term. Required of Seniors in all courses.*

VI. Literature and Composition.—In kind and amount according to individual need. *Not less than two recitation credits per week, first term. Elective for Freshmen.*

VII. The English Novel.—Study of the development and technique of the novel in England. *Two recitation credits per week, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics courses.*

XI. American Poetry.—An appreciative reading study of American Poetry as a whole, using Stedman's "An American Anthology" as a basis for the work. *Two recitation credits per week, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics courses.*

Rhetoric and Composition

PROFESSOR CHURCHILL, MISS PECK

I. Rhetoric and Composition.—Outlines of rhetorical theory, study of models illustrating the various literary forms, exercises, weekly themes. *Three recitation credits per week, thruout the year. Required of Freshmen in all courses.*

II. Newspaper Work.—The technique of structure and style as applied to newspaper methods. Daily practice, special emphasis on editorial paragraph writing, based on the study of current events. *One recitation credit per week, first term. Required of Sophomores in all courses.*

III. Argumentation.—Theory and Practice. Training in the principles of brief-drawing; weekly practice in extemporaneous speaking and debating. *Two recitation credits per week, second term. Required of Sophomores in all courses.*

VIII. Interpretive Reading.—Training in the fundamental principles of pronunciation, articulation, emphasis, inflection, phrasing, quality, force, pitch, rhythm. Besides the ultimate practical purpose, this course is intended to give the necessary preparation for effective public speaking in the courses in debate and oratory during the Junior and Senior years. *One recitation credit per week, first term. Required of Sophomores in all courses.*

IX. Debating.—Instruction and practice in the art of debate. *One recitation credit per week, thruout the year. Required of Juniors in all courses.*

X. Oratorical Writing and Extemporaneous Speaking.—Critical study of representative English and American orations as models; weekly practice in extemporaneous speaking and in the technique of oratorical writing. Criticism on the construction of one long oration. *One recitation credit per week, thruout the year. Required of Seniors in all courses.*

Geology and Mineralogy

PROFESSOR LEIGHTON, ASSISTANT PROFESSOR SMITH, MR. PERKINS

GEOLOGY.—Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to those characteristics of rocks which are of chief importance in connection with road construction.

DETERMINATIVE MINERALOGY.—A subject dealing with the elements of crystallography is given, together with the physical and chemical characteristics of minerals, especially that of rock-making minerals composing our soils. Laboratory work in blowpipe analysis and physical determination of minerals follows the crystallography.

Subjects

I. Geology.—*Two recitation credits per week, second term. Required of Juniors in Civil Engineering and Sophomores in Agriculture and Applied Science.*

II. Mineralogy.—See Chemistry XI.

History

PRESIDENT EDWARDS, PROFESSOR CHURCHILL

I. Social, Economic, and Industrial History of the United States.—*Four recitation credits per week, second term. Required of Juniors in all courses.*

II. Government and Politics in the United States.—*Four recitation credits per week, first term, last six weeks; and second term, first six weeks. Required of Seniors in all courses.*

Home Economics

PROFESSOR CAMPBELL

The aim of this department is to give both theoretical and practical training in the economic administration of the home. The laboratory is situated in a building by itself, which is finished and furnished in such a manner as to demonstrate the sanitary principles involved in proper kitchen arrangements. It is amply equipped with the most recent scientific cooking-apparatus, inclusive of thermometers, metric scales, different kinds of stoves, and individual utensils. The work in chemistry, biology, etc., is, however, carried on in the laboratories of those departments. There is a good home economics library, and students are expected to make intelligent use of the main library in reference work, as well as to study those bulletins of the Department of Agriculture and such state reports as deal particularly with the subjects of food and nutrition.

Subjects

I. Domestic Art.—The subject includes a study of the home industries, the study of the various textile fibers, and development of spinning and weaving, modern processes of manufacture and the comparison of textile fabrics with special reference to suitability to use and economic value. The laboratory work includes both hand and machine sewing, the taking of measurements, selection, alteration, and designing of patterns, the making of aprons, underwear, tailored waists, and dresses. *One laboratory credit per week, first term; and three laboratory and two recitation credits per week, second term. Required of Freshmen in Home Economics.*

III. a. Personal Hygiene.—This subject considers the aim of personal hygiene as the maintaining of the most efficient human machine for the life needs of the individual. It endeavors to give and establish ideals of health and efficiency. *One recitation credit per week, first term. Required of all women Freshmen.*

III. b. Euthenics.—The following topics are considered: environment of human life; problems of adaptation to modern conditions and progress; personal aim; individual responsibility; factors in human efficiency. *One recitation credit per week, second term. Required of all women Freshmen.*

IV. Foods.—A systematic study is made of the food constituents, their sources, chemical composition, properties, nutritive and economic values. This course is accompanied by laboratory practice in the preparation of many representative foods. Class demonstrations are given from time to time. *Three recitation and three laboratory credits per week, first term; two recitation and one and one-half laboratory credits per week, second term. Required of Sophomores in Home Economics. Prerequisites: Chemistry I, II.*

VI. Human Nutrition.—Composition of the animal body and its daily food requirements; methods of investigation employed in studying the nutritive function of foods; the changes affected by cooking and by the processes of digestion; balancing of dietaries; food economy. *Three recitation credits per week, first term. Required of Juniors in Home Economics. Prerequisite: Chemistry IV, Zoölogy X, Home Economics IV.*

VII. Home Decoration.—A study of the evolution of the house; its adaptation to modern conditions; the principles to be followed in planning, furnishing, and decorating the house from a sanitary and artistic standpoint. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Prerequisite: Home Economics IX.*

VIII. Dietetics.—Problems in nutritive ratios; the balanced dietary; hygienic combinations of foods; construction of menus; adaptation of the diet to age, occupation, health, and different climatic conditions. *Two recitation and one laboratory credit per week, second term. Required of Juniors in Home Economics. Prerequisite: Home Economics VI.*

IX. Sanitation.—This subject deals with household and public hygiene. Study of health and the causes of disease; vital resistance; susceptibility and immunity; infection and contagion; pollution of food and water supplies; prevention and inhibition of infection, decomposition, and decay. *Two recitation credits per week, first term. Required of Juniors in Home Economics.*

X. Food Preservation.—Study of the processes of decomposition, fermentation, and putrefaction; practice in preserving foods by drying, salting, and sterilization; preparation of jelly, pickles, and canned fruits; discussion of commercial preservatives. *One laboratory credit per week, first term. Elective of Seniors in Home Economics. Prerequisite: Home Economics IX.*

XI. Hygiene and Care of Children.—A study of the physical development of children; care of infants and young children; school hygiene. *Two recitation credits per week, first term. Required of Seniors in Home Economics. Prerequisite: General Psychology. Open to Juniors and Seniors in other courses.*

XII. Home Nursing.—Care of the sickroom and patient; administration of medicines; recording of symptoms; accidents and emergencies; hygiene of infectious diseases; antiseptics and disinfectants. *One recitation credit per week, second term. Required of Seniors in Home Economics. Prerequisite: Home Economics IX.*

XIV. Assigned Work.—This may be a problem in the biological, chemical, physiological, or economic aspect of the work in Home Economics. *Three recitation and two laboratory credits per week, second term. Required of Seniors in Home Economics.*

XV. Teaching of Home Economics.—Purpose and method of the work; courses of study, equipment, etc. *One recitation credit per week, second term. Elective for Seniors in Home Economics.*

XVI. History of Home Economics.—Development of home economics movement; a study of the work as presented in different types of institutions, and its

industrial, educational, and sociologic aspects. *One recitation credit per week, first term. Elective.*

XVIII. Dressmaking and Tailoring.—*Three laboratory credits per week, second term. Elective for students who have completed Home Economics I.*

XX. A Study of the Family.—Development of the domestic institutions; social ethics of the family; legal, industrial, and educational problems of the household. *Two recitation credits per week, second term. Prerequisite: Home Economics V. Elective.*

XXI. Home Administration.—This subject includes the care of the home, the planning, buying, preparation and serving of menus suitable for various occasions, methods of simplification of home duties, division of income, and keeping of household accounts. *One recitation and two laboratory credits per week, first term. Prerequisite: Home Economics VIII. Required of Seniors in Home Economics.*

HORTICULTURE

PROFESSOR COBB, MR. GODIN

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the horticultural building. The main building contains the office and recitation rooms, together with photographic rooms. Attached to this building are greenhouses of modern construction, containing over 8,000 square feet under glass, 3,000 square feet of which is used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens, and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity for the study of apples and pears especially. There is also a small vineyard. A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects

I. Propagation of Plants.—Different methods, including seed testing. Soft, green, and hardwood cuttings. Layering, grafting, and budding. *One recitation and one laboratory credit per week, first term. Required of Freshmen in Agriculture and Applied Science.*

II. Vegetable Gardening.—Underlying principles and types of vegetable gardening; study of individual crops; text-book work. *Two recitation credits*

per week, second term. Required of Freshmen in Agriculture. Option for Seniors in Applied Science.

III. Fruit Culture.—Fundamental principles of orcharding; soil, fertilizer, and cultivation. Methods of laying out orchards and planting. Tillage, pruning and spraying. Harvesting and storing fruits. Collateral reading and practical work. *Two recitation credits per week, first term. Required of Juniors in Agriculture. Option for Juniors in Applied Science.*

IV. Spraying and Pruning.—Preparation and application of spray mixtures; insecticides and fungicides. Methods of application for different orchard enemies, and machinery used. Pruning of trees and ornamental shrubs. *One recitation and one laboratory credit per week, second term. Required of Freshmen in Agriculture. Option for Seniors in Applied Science.*

V. Greenhouse Construction and Management.—Study of the different types of glasshouse structures; methods of heating and ventilating. *One recitation and two laboratory credits per week, second term. Option for Juniors in Agriculture.*

VIa. Floriculture.—History of floriculture. Study of greenhouse plants, collectively and individually; practical work in propagation, potting, watering, ventilating, fumigating, and spraying. Study of bulbs, bedding plants, palms and ferns. *One recitation and two laboratory credits per week, entire year. Option for Seniors in Agriculture. Prerequisite: Horticulture V.*

VIII. Literature of Horticulture.—See Agronomy IX.

IX. Assigned Work.—Special subjects chosen by the student. *Option for Seniors in Agriculture. Hours to be arranged.*

X. Pomology.—Orchard and bush fruits. Study of types; origin, and history; classification, description, and methods of handling. Orchard management. *One recitation credit and two laboratory credits per week, thruout the year. Option for Seniors in Agriculture and Applied Science. Prerequisite: Horticulture III.*

XI. Advanced Vegetable Gardening.—Study of one or more crops selected by student. Practical work, research work, and text-book. *One recitation credit and two laboratory credits per week, second term. Option for Seniors in Agriculture.*

XII. Plant Breeding.—See Agronomy XI.

XIII. Advanced Landscape Gardening.—A continuation of Horticulture VII, including an advanced study of the art which embraces the following points: topographical surveying and map work, drainage, grading, specifications, etc. Park and cemetery work, civic improvement. *One recitation and two laboratory credits per week, thruout the year. Option for Seniors in Agriculture. Prerequisite: Horticulture XVI.*

XIV. Arboriculture.—Study of ornamental trees, shrubs, and other plants, both native and exotic, which are used in landscape gardening. This subject is designed to enable the student to become familiar with the character, habit and adaptation of ornamental plants. *One recitation and one laboratory credit per week, first term. Option for Sophomores in Agriculture.*

XV. Tree Surgery.—A study of methods used in treating diseases of trees and shrubs. Treatment of insect injuries, preventive and remedial measures such as chaining and bolting, to be used in case of neglect, and mechanical injuries. Cement filling of cavities. *One recitation and two laboratory credits per week, second term. Option for Seniors in Agriculture.*

XVI. Landscape Gardening.—This subject is designed for students in general and consists of the rules and principles governing landscape gardening, the design and laying out of grounds for farm, village, and city places, making of lawns, flower beds, etc. *One recitation and two laboratory credits per week, first term. Required of Juniors in Agriculture. Option for Seniors in Applied Science. Prerequisite: Horticulture XIV.*

A. Vegetable Gardening.—Fundamental principles of vegetable growing. Practical work in cold frames, hotbeds, and garden planting. *Three recitation credits and one and one-half laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year.*

B. Fruit Culture.—Study of fruits; propagation; planning fruit gardens and plantations; harvesting and packing; care. *Three recitation credits and one laboratory credit per week, first term. Required of Short-Course students in Agriculture, second year.*

E. Spraying and Pruning.—A study of the methods used in combating insect pests and plant diseases. Preparation and application of fungicides and insecticides. Study of nozzles, pumps, etc. *Two recitation and one and one-half laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year.*

F. Home Grounds.—A study of the materials to use, the essential principles of the art. Practice in designing, planting, and care of home grounds. *Three recitation credits per week, second term. Required of Short-Course students in Agriculture, second year.*

Languages, Modern

MISS MYRICK

FRENCH

I. Elementary French.—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits per week, thruout the year.*

II. Reading of intermediate texts, composition, conversation, selections from Hugo's *Les Misérables* or similar work. *Three recitation credits per week, thruout the year.*

III. Scientific and Classical French.—*Three recitation credits per week thruout the year. Elective for students who have taken I and II or their equivalents.*

IV. Scientific French.—*From three to five recitation credits, first term, Freshman year. Elective for Freshmen.*

GERMAN

I. Elementary German.—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits per week, thruout the year. Required of Freshmen who do not offer German for entrance.*

II. Reading of texts portraying German life and institutions, composition, conversation. *Three recitation credits per week, thruout the year. Required of Sophomores in Agriculture, Applied Science, Home Economics, and Chemical Engineering.*

III. Scientific German.—*Three recitation credits per week, thruout the year. Elective for students who have taken I and II or their equivalents.*

IV. Scientific German.—*From three to five recitation credits per week, first term, Freshman year. Elective for Freshmen.*

SPANISH

Work in the Spanish language parallel with the foregoing in German and French will be offered for 1916-17.

Mathematics

PROFESSOR TYLER, MR. BILLS

Subjects

I. College Algebra.—*Five recitation credits per week, nine weeks, first term. Required of Freshmen in Engineering and Applied Science. Professor Tyler, Mr. Bills.*

II. Trigonometry.—*Five recitation credits per week, nine weeks, first term. Required of all Freshmen. Professor Tyler, Mr. Bills.*

III. Higher Algebra.—*Five recitation credits per week, nine weeks, first term. Required of Freshmen in Agriculture and Home Economics. Mr. Bills.*

VIII. a. Trigonometry completed and Analytics.—*Five recitation credits per week, second term. Required of Freshmen in Engineering. Professor Tyler, Mr. Bills.*

VIII. b. Trigonometry completed and Elementary Analysis.—*Five recitation credits per week, second term. Required of Freshmen in Applied Science. Mr. Bills.*

X. Calculus.—*Five recitation credits per week, first term. Required of Sophomores in Engineering. Professor Tyler.*

XI. Calculus (completed).—*Five recitation credits per week, second term. Required of Sophomores in Engineering. Professor Tyler.*

XII. University Algebra.—*Three recitation credits per week, first term. Elective for Freshmen.*

XIII. Practical Computations.—*Three recitation credits per week, second term. Elective for Freshmen.*

XIV. Spherical Trigonometry.—*One recitation, first term. Elective as an extra.*

XV. Solid Analytics.—*One recitation, second term. Elective as an extra.*

Military Science and Tactics

CAPTAIN DOVE

All male college students are required to take military instruction as prescribed, both practical and theoretical, during their attendance at college, unless excused by reason of physical disability. They may, however, be excused after service during four collegiate years. Credit is given for this work on the same basis, and under the same regulations, as in other departments.

For this instruction the War Department furnishes the necessary number of United States magazine rifles, cal. 30, model of 1898 (Krag-Jorgensen pattern), and equipments, and ammunition for gallery practice with the .22 cal. rifle.

The cadet organization this year consists of a battalion of infantry (four companies) and a band.

In the practical instruction infantry drill and training will be considered paramount. The theoretical course is based strictly upon the main object of the military instruction, and will consist largely of talks or lectures, illustrated by lantern slides or objects whenever possible.

The aim of these military exercises is to improve the physique, to inculcate the habit of prompt and cheerful obedience and courtesy to rightfully constituted authority, to exercise an elevating influence on the conduct of the corps of cadets, and as far as possible to qualify students who take the military course to be company officers of infantry, volunteers or militia, if necessary.

For the purpose of holding a competitive drill between the companies to determine the best drilled company, a competitive drill to determine the best drilled private, and such other exercises as may be arranged, May 16, 1916, has been set aside as Military Day, the afternoon to be devoted to the program.

The military department is inspected annually by an officer of the General Staff, U. S. Army, detailed from Washington, and the names of such students of the graduating class each year as have shown special aptitude for military service will be reported to The Adjutant General of the Army, and a copy of such report sent to the Adjutant General of each State of which such graduates are residents.

All students in the military department are required to supply themselves, thru the commandant, with the prescribed uniform, which consists of dark blue blouse, cap and trousers, white collar and white gloves, military pattern, and black shoes; the insignia of rank of officers and non-commissioned officers to conform to that of the infantry, United States Army.

Uniforms must be worn at all ceremonies, drills, and other forms of practical instruction.

Subjects

I. Practical Instruction.—(a) Infantry Drill Regulations, including the school of the squad, of the company, and of the battalion. Intrenchments. Ceremonies and inspections. (b) Text,—“Small Arms Firing Manual.” Sighting drills, position and aiming drills, gallery practice, estimating distance. (c) Text,—“Field Service Regulations.” Orders, advance guards, flank guards, rear guards, outposts, patrolling, and marches whenever possible. (b) Text,—“Manual of Guard Duty.” *Two exercises of one hour each per week, counting as one credit, thruout the year. Required of all male students.*

II. Theoretical Instruction.—United States Infantry Drill Regulations. Small Arms Firing Regulations. Manual of Guard Duty. Field Service Regulations of United States Army. *One recitation credit per week, last nine weeks of first term and first nine weeks of second term. Required of all Freshmen.*

III. Theoretical Instruction.—United States Infantry Drill Regulations, Small Arms Firing Regulations, Manual of Guard Duty, Field Service Regulations of the United States Army, instruction in the preparation of reports, returns, orders, etc., in the method of correspondence, military map reading and map problems, and, in general, in the duties of company and battalion officers. *One recitation credit per week, first nine weeks of first term, and first nine weeks of second term. Required of all commissioned officers.*

IV. Theoretical Instruction (advanced).—*One recitation credit per week, second nine weeks of first term, and second nine weeks of second term. Elective for all commissioned officers.*

Physics

PROFESSOR DICKINSON, ASSISTANT PROFESSOR COGGINS

Physics is regarded as a fundamental science, a mastery of which is essential to success in engineering or in any calling involving the application of scientific methods and processes. Therefore emphasis is placed upon the practical applications of the principles involved,

not only for the purpose of affording preparation for future work, but with the idea of stimulating the student to an interest in his professional work.

At the same time, some effort is made to present the subject from the standpoint of a pure science, and to instill in the student a respect for scientific methods, and to prepare him for advanced work in research and investigation. Advanced mathematics is employed, wherever its use is deemed necessary for a rigorous and complete development of the subject.

Instruction is given in both class-room and laboratory, the two methods being closely correlated. The department is well equipped with high grade apparatus, much of which has been recently imported. In mechanics, special attention is given to problems involved in the application and transmission of power.

In the laboratory of heat measurements, the problems involved in the transformation of heat into useful energy, are strongly emphasized.

In light, the department is able to carry on work of the usual college grade, being well equipped with high grade photometers, spectrometers, interferometers, and refractometers.

The laboratory of electrical measurements is particularly well equipped for the carrying on of advanced work.

Subjects

I. Descriptive Physics.—A course designed for students in Agriculture and Home Economics. The course furnishes an excellent foundation for further work in physics. *Five recitation credits per week, second term. Required of Sophomores in Agriculture and Home Economics.*

II. General Physics.—A mathematical treatment of the subject, in which a knowledge of elementary Physics is presupposed. *Four recitation credits per week, thruout the year. Required of all Sophomores in Engineering and Applied Science.*

III. Laboratory Physics.—A course in physical measurements intended to teach students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits per week, thruout the year. Required of Sophomores in Engineering and Applied Science.*

V. Electrical Measurements.—Direct-current measurements, resistance, potential, current, magnetic properties of iron and steel, calibration of direct-current instruments. *One and one-half laboratory credits per week, first term. Required of Juniors in Electrical Engineering.*

VI. Principles of Illumination.—A study of different sources of light, photometrical measurements, and the principles of illuminating engineering. *One recitation credit and one and one-half laboratory credits per week, first term. Required of Juniors in Electrical Engineering.*

Physical Training

MISS BAILEY.

All women students are required to attend the gymnasium exercises. These are designed to improve the general health of the young women and to train them in agility, poise, and general gracefulness, and to develop alertness and a ready response to any order or request. The exercises are confined to the lighter work of a gymnasium because of a lack of other equipment.

I. Marching; free arm exercises; wand and dumb-bell exercises; Indian club swinging. *One laboratory credit per week, thruout the year. Required of all women students.*

Psychology and Education

PROFESSOR BOARDMAN

The subjects in education provide instruction in the theory of the subject as derived from general and educational psychology, and in the history of education. As a part of the work visits are made to neighboring elementary and secondary schools for the purpose of observing the technique of the recitation with special reference to the courses in science.

Subjects

I. History of Education.—Study of educational theory and practice from the historical point of view, with reference to modern scientific and industrial education. *Three recitation credits per week, second term. Required in Applied Science: Elective in Home Economics. Next given in 1917-1918.*

II. Principles of Education, School Law and Administration.—Study of the principles and methods of teaching and administration, and of Rhode Island school law. *Three recitation credits per week, first term. Required in Applied Science: Elective in Home Economics. Next given in 1916-1917.*

III. Secondary Education.—Principles of teaching, with special reference to the aims of the secondary schools, organization, management, and method in the high school. *Three recitation credits per week, second term. Required in Applied Science: Elective in Home Economics. Next given in 1916-1917.*

IV. General Psychology.—Structure and functions of mental life; simple experiments. *Three recitation credits per week, first term. Required in Applied Science and Home Economics. Next given in 1917-1918.*

VIII. How to Study.—A practical course, based on psychological principles, designed to increase the efficiency of students. *One recitation credit per week, first nine weeks of the first term. Required of all Freshmen.*

Zoölogy

PROFESSOR BARLOW

The work in this department is designed to meet the needs of two classes of students, those who are interested in the economic aspect of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic importance of the different orders. Much time is allotted to entomology, and in this subject special attention is given to injurious species. For those who are to be teachers, a thoro training is given in the morphology and classification of animals as a preparation for the more special subjects that follow. In these attention is directed to the habits and relations of animals which are studied both in the field and laboratory.

The laboratory is equipped with a series of charts, valuable models, and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about one hundred cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes. The necessary instruments for laboratory work can be procured at small cost at the college store.

Subjects

I. Invertebrate Zoölogy.—Discussion of the more important laws of biology and the dissection of representatives of the more important Phyla. *Two laboratory credits and one recitation credit per week. Second term. Option for Juniors in Applied Science.*

II. General Zoölogy.—Special attention is given to the relation of animals to their surroundings. *Two laboratory credits and one recitation credit per week, second term. Option for Seniors in Applied Science.*

IV. Economic Entomology.—*One laboratory and three recitation credits per week, second term. Option for Juniors in Agriculture and Applied Science.*

V. General Entomology.—*Two laboratory credits and one recitation credit per week, first term; two recitation and two laboratory credits per week, second term. Option for Seniors in Applied Science.*

VI. Systematic Entomology.—*Three or five laboratory credits per week, thruout the year. Elective for those who are taking or have taken Zoölogy V.*

VIII. Histology and Embryology.—*Three laboratory and two recitation credits per week, first term. Required of Juniors in Home Economics. Option for Juniors in Applied Science.*

IX. Methods in Nature Study.—*Bird life, habits of insects, aquaria. One and one-half laboratory or field credits per week, second term. Elective.*

X. Vertebrate Zoölogy.—*The anatomy and physiology of the higher vertebrates. Two laboratory and two recitation credits, thruout the year. Required of Sophomores in Agriculture, Home Economics and Applied Science.*

A. Animal Life.—*This subject deals with animals of economic importance. Special attention is given to injurious insects. Three recitation and two laboratory credits, second term, second year. Short course in Agriculture.*

Student Organizations

Athletic Association

RALPH WILLIAM GIBBS.....	President.
WESLEY CROWELL BRIGHAM.....	Vice-President.
JAMES ANDREW CLARK.....	Secretary.

Agricultural Club

CLIFFORD MURDOCK RICE.....	President.
HOMER RANSOM ROWELL.....	Vice-President.
ASHBEL RUSSELL WELLES.....	Secretary.

Debating Society

DANIEL GASKILL ALDRICH.....	President.
DEAN BLENUS FRASER.....	Vice-President.
SOLOMON FINE.....	Secretary.
HENRY EDMUND MEDBERY.....	Treasurer.

Glee Club

HERBERT ANDREW WISEBEY.....	Manager.
PHINEAS MUNSELL RANDALL.....	Leader.

Student Council

JAMES MURRAY HENRY.....	President.
ERNEST ELMER REDFERN.....	Vice-President.
JAMES ANDREW CLARK.....	Secretary.

Young Men's Christian Association

JAMES HUGH WILLIAMSON.....	President.
GEORGE HARRY KERR.....	Secretary.

Young Women's Christian Union

MARJORIE WHITING CHACE.....	President.
GRACE LILLIAN RIECKEL.....	Secretary.

Electrical Engineering Society

CHARLES EDWARD SEIFERT.....	President.
PHINEAS MUNSELL RANDALL.....	Secretary.

Civil Engineering Society

THOMAS WILLIAM FREEMAN.....	President.
JAMES FRANCIS PYNE.....	Vice-President.
JAMES HUGH WILLIAMSON.....	Secretary.
ALBERT EDWARD MCINTOSH.....	Treasurer.

R. I. S. C. Society of Mechanical Engineers

ERNEST GEORGE FIELD.....	Chairman.
CLARENCE HOWARD PARKER.....	Secretary.

Chemical Society

AMBROSE ROYLE CHANTLER.....	President.
CHARLES IRVING MILNES.....	Vice-President.
JAMES ANDREW CLARK.....	Secretary.

Lecture Association

JAMES MURRAY HENRY.....	President.
HARRY COHEN.....	Vice-President.
GEORGE R. COBB.....	Treasurer.

The Beacon

WILLIAM ELLIS GILLIS.....	Editor-in-Chief.
JAMES HUGH WILLIAMSON.....	Managing Editor.
JAMES FRANCIS PYNE.....	Manager.

Prohibition Society

DANIEL GASKILL ALDRICH.....	President.
ABRAHAM SAMUEL LAHN.....	Secretary.
THEODORE ANDREW PALMER.....	Treasurer.

BATTALION ORGANIZATION MARCH 1, 1916

 Commandant

WILBUR E. DOVE, Captain, United States Army

CADET OFFICERS AND NON-COMMISSIONED OFFICERS

Battalion

Major.....	THOMAS W. FREEMAN.
First Lieutenant and Adjutant.....	ERNEST E. REDFERN.
Second Lieutenant, Quartermaster and Commissary.....	THEODORE A. PALMER.
Sergeant Major.....	WILFRED R. EASTERBROOKS.
Quartermaster Sergeant.....	LESTER W. LLOYD.
Color Sergeant.....	GEORGE E. LUSSIER.
Color Sergeant.....	AMBROSE R. CHANTLER.

Company A.

Captain.....	ERNEST G. FIELD.
First Lieutenant.....	CHARLES E. SEIFERT.
Second Lieutenant.....	KENNETH M. SLOCUM.
First Sergeant.....	JAMES A. CLARK.
Co. Quartermaster Sergeant.....	HOMER R. ROWELL.
Sergeant.....	CLIFFORD M. RICE.
Sergeant.....	LESLIE L. DUNHAM.
Corporal.....	HENRY A. BARTELS.
Corporal.....	ALBERT R. MAYER.
Corporal.....	LESTER L. SMITH.
Corporal.....	JAMES J. DEVINE.
Corporal.....	JACKSON B. LEWIS.

Company B.

Captain.....	JAMES M. HENRY.
First Lieutenant.....	PHINEAS M. RANDALL.
Second Lieutenant.....	Vacancy.
First Sergeant.....	DAVID A. REDFORD.
Co. Quartermaster Sergeant.....	THOMAS F. VICTORY.
Sergeant.....	AUBREY H. THAYER.
Sergeant.....	HENRY E. MEDBERY.
Sergeant.....	FRANK E. GREENHALGH.
Corporal.....	HAROLD Q. MOORE.
Corporal.....	WALTER B. DAVIS.
Corporal.....	GEORGE A. FEARN.
Corporal.....	ALBERT A. LEBOEUF.
Corporal.....	HERBERT A. WISBEY.

Company C.

Captain.....	CLARENCE H. PARKER
First Lieutenant.....	DEAN B. FRASER.
Second Lieutenant.....	RALPH E. GLASHIEN.
First Sergeant.....	ASHBEL R. WELLES.
Co. Quartermaster Sergeant.....	SETH F. H. LAGERSTEDT.
Sergeant.....	JAMES H. WILLIAMSON.
Sergeant.....	RAYMOND D. TAYLOR.
Sergeant.....	ABRAHAM S. LAHN.
Corporal.....	JOHN L. DANEKER.
Corporal.....	GEORGE H. KERR.
Corporal.....	HAROLD A. GARDNER.
Corporal.....	SAMUEL E. LAWRENCE.
Corporal.....	HAROLD K. WILDER.

Company D.

Captain.....	FRANK A. FARON.
First Lieutenant.....	EARL WALMSLEY.
Second Lieutenant.....	VINCENT C. YOUNG.
First Sergeant.....	DONALD J. KENDALL.
Co. Quartermaster Sergeant.....	LEONARD S. HOLLEY.
Sergeant.....	JAMES A. MURPHY.
Sergeant.....	FREDERICK C. T. SLAUSON.
Corporal.....	JAMES R. WALSH.
Corporal.....	ROWLAND S. DODGE.
Corporal.....	JOHN W. CRUICKSHANK.
Corporal.....	DAVID L. WOOD.
Corporal.....	DONALD E. CARLTON.

Band.

Chief Musician, with rank of Second Lieutenant.....	CLINTON D. HAWKINS.
Principal Musician.....	HENRY F. DANIELS.
Drum Major.....	CLARENCE J. CONYERS.
Sergeant.....	THEOSE E. TILLINGHAST.
Corporal.....	WILLIAM J. BECKER.
Corporal.....	GEORGE J. MALLOY.

Alumni Association

RANDOLPH HAYWARD CARPENTER, 1910.....President.
New York City.

FRANK HAROLD BRIDEN, 1913.....Vice-President.
Port Hope, Ontario.

HOWLAND BURDICK, 1895.....Secretary-Treasurer.
Kingston.

Executive Committee.

RANDOLPH H. CARPENTER, 1910.....HOWLAND BURDICK, 1895.
FRANK H. BRIDEN, 1913.....HENRY N. BARLOW, 1912.
EDITH C. KEEFER, 1903.

Prizes and Honors

PHI KAPPA PHI

In the spring of 1913 was organized at the Rhode Island State College a chapter of *Phi Kappa Phi*, a national scholarship society, whose purpose, as stated in the preamble of the constitution, is "to provide a Fraternity, dedicated to the Unity and Democracy of Education, and open to honor graduates of all departments of American Universities and Colleges."

At the end of the year 1914 thirteen chapters had been established in prominent institutions throughout the country, and some have since been added.

Since the organization of the local chapter, in 1913, from Faculty, Alumni and Seniors approximately fifty men and women have been elected on the basis of honor grade in scholarship. From year to year honor students of successive senior classes become eligible to membership.

THE KINGSTON PRIZES

The sum of sixty dollars offered by a friend of the college to encourage literary work among the students, was divided in 1915 into three portions, providing a first prize of thirty-five dollars, a second of fifteen dollars, and a third of ten dollars, for the best essays submitted in a contest held on May 25, 1915. The awards were as follows:

FIRST PRIZE:

ESSAY—"Vivisection." Albert Clayton Hunter.

SECOND PRIZE:

ESSAY—"Bacteriology in its Relation to Communicable Diseases." Raymond Livingston Barney.

THIRD PRIZE:

ESSAY—"The Conservation of the Soil." Solomon Fine.

THE BURCHARD CUP

In 1912 the Honorable Roswell B. Burchard presented to the college a handsome silver cup to be used as a fraternity scholarship trophy. Each year the fraternity or other organized group of students whose average scholarship grade stands highest, wins the honor of having its name inscribed on the cup. When any fraternity has

achieved this distinction for three consecutive years, it thereby secures permanent ownership of the cup. In 1914 and in 1915 Beta Phi won the honors.

HONORS

Honors awarded Commencement Day, June 16, 1915:

FINAL HONORS FOR FOUR YEARS:

High Honors—Norman Harrison Borden, Robert William Belfit, Wesley Clifton Miller.

Honors—Harold Clayton Wilcox.

SENIOR HONORS.

Leroy Albert Whittaker
Robert William Belfit
Albert Clayton Hunter
Wesley Clifton Miller

JUNIOR HONORS.

Charles Edward Seifert.

SOPHOMORE HONORS.

Solomon Fine.

FRESHMAN HONORS.

Harold Kenneth Wilder
Hannah Amelia Stillman
Dorothy Estelle Haskell
Ramon Alijo Pla
Nelson Everett Blake
Charles Everett Mason
John Joseph Conway

Degrees Conferred in 1915

Bachelor of Science

George Holland Baldwin
Raymond Livingston Barney
Robert William Belfit
Norman Harrison Borden
John Brechin
Kenneth Allen Brownell
Carl Lafayette Coleman
William Earl Dodge
Curtis Wolcott Gates
Carlisle Hall
Ada LaPlace Harding
Leon Irving Harris
Royal Carlton Hudson

Albert Clayton Hunter
John Louis Jackowitz
Lawrence Fuller Keith
Alfred Patrick Kivlin
Frank Joseph Lennox
John Edward Meade
Wesley Clifton Miller
Joseph Elton Nichols
Harry Oscar Valdimar Nordquist
Ralph Langley Parker
Adelaide Gilbert Watson
Leroy Allen Whittaker
Harold Clayton Wilcox

Civil Engineer

Arthur Jacob Minor.

Students

Graduates

Heath, Bertha May (B. S., R. I. S. C., 1910).....	Kingston.
Howard, Lewis Philip (B. Sc., Mass. Agr. Coll., 1914).....	Kingston.
Merkle, George Edward (B. Sc., Mass. Agr. Coll., 1912).....	Kingston.
Spencer, George Edward (B. Sc., Syracuse Univ., 1914).....	Kingston.

Seniors

Aldrich, Daniel Gaskill, Agr.....	Georgiaville.
Becker, William Joseph, Jr., Mech. Eng.....	Ridgewood, N. J.
Burr, Dorothy Isabelle, Home Econ.....	Riverside.
Carleton, Everett Augustus, Agr.....	Kingston.
Chantler, Ambrose Royle, Chem. Eng.....	Pawtucket.
Conyers, Clarence John, Agr.....	Providence.
Cordin, Gilbert Ralph, Chem. Eng.....	Providence.
Curran, Emilie May, Home Econ.....	Pawtucket.
Daniels, Henry Fales, Civ. Eng.....	Pawtucket.
Faron, Frank Aloysius, Elec. Eng.....	Woonsocket.
Field, Ernest George, Mech. Eng.....	Providence.
Fine, Solomon, Appl. Sci.....	Attleboro, Mass.
Fraser, Dean Blenus, Civ. Eng.....	Kingston.
Freeman, Thomas William, Civ. Eng.....	Fort Adams.
Glasheen, Ralph Earle, Civ. Eng.....	Kingston.
Hanlin, William Frank, Agr.....	Arlington.
Henry, James Murray, Mech. Eng.....	Kingston.
Hill, Edwin Douglas, Agr.....	Providence.
Holley, Leonard Stanley, Agr.....	Wakefield.
Hoxsie, Annie Sarah, Home Econ.....	Canochet.
Kelly, Henry Clinton, Civ. Eng.....	Providence.
Lagerstedt, Seth Frederick Hadley, Agr.....	Kingston.
Lewis, William Emanuel, Agr.....	East Providence.
Lloyd, Lester William, Agr.....	Kingston.
Lussier, George Emile, Elec. Eng.....	Woonsocket.
McIntosh, Albert Edward, Civ. Eng.....	Providence.
McLeod, Leander Wallace, Mech. Eng.....	Providence.
Medbery, Henry Edmund, Appl. Sci.....	East Providence
Meeers, Etta Elizabeth, Home Econ.....	Kingston.
Milnes, Charles Irving, Chem. Eng.....	Providence.
Palmer, Theodore Andrew, Agr.....	Hope Valley.
Parker, Clarence Howard, Mech. Eng.....	Kingston.

Price, Milton Harris, Agr.	Providence.
Randall, Bertha Adelaide, Home Econ.	Providence.
Randall, Phineas Munsell, Elec. Eng.	Westerly.
Rowell, Homer Ransom, Agr.	Kingston.
Seifert, Charles Edward, Elec. Eng.	Chepachet.
Short, Carleton Webb, Chem. Eng.	East Providence.
Victory, Thomas Francis, Elec. Eng.	Warren.
Walmsley, Earl, Chem. Eng.	Anthony.
Young, Vincent Case, Mech. Eng.	Bristol.

Juniors

Ames, Arnold Willard, Mech. Eng.	Westerly.
Anderson, John Gordon, Appl. Sci.	Westerly.
Anthony, Harold Congdon, Agr.	Newport.
Bartels, Henry Arthur, Agr.	New York, N. Y.
Brigham, Wesley Crowell, Elec. Eng.	Pawtucket.
Broadfoot, Henry Harrington, Chem. Eng.	Westerly.
Browne, Elizabeth Hope, Home Econ.	Pawtucket.
Clark, James Andrew, Chem. Eng.	Providence.
Cohen, Harry, Elec. Eng.	Providence.
DeMay, Winfred West, Civ. Eng.	Wethersfield, Conn.
Easterbrooks, Wilfred Ross, Civ. Eng.	Wakefield.
Ebbs, Robert Allen, Chem. Eng.	Newport.
Flynn, William Augustus, Civ. Eng.	Providence.
Gibbs, Ralph William, Elec. Eng.	West Barrington.
Goddard, Franklin Perry, Elec. Eng.	Newport.
Greenhalgh, Frank Elmer, Civ. Eng.	Chepachet.
Harry, Charles Edward, Agr.	East Providence.
Hawkins, Clinton Dexter, Chem. Eng.	Pawtucket.
Kendall, Donald John, Agr.	Brockton, Mass.
Lahn, Abraham Samuel, Civ. Eng.	Westerly.
Lawrence, Samuel Eugene, Appl. Sci.	New London, Conn.
Lewis, George Mitchell, Appl. Sci.	Kingston.
Murphy, James Aloysius, Chem. Eng.	Woonsocket.
Pyne, Francis James, Civ. Eng.	Brockton, Mass.
Redfern, Ernest Elmer, Chem. Eng.	Woonsocket.
Redford, David Adam, Mech. Eng.	Pawtucket.
Rieckel, Grace Lillian, Home Econ.	Providence.
Rodman, Samuel Lyman, Agr.	Gould.
Slocum, Kenneth Matteson, Civ. Eng.	Central Falls.
Smith, Harold Burlen, Appl. Sci.	Kingston.
Taylor, Raymond Douglas, Agr.	Westerly.
Tew, Joseph Gardiner, Appl. Sci.	Phenix.
Thayer, Aubrey Harvey, Elec. Eng.	Nasonville.
Tillinghast, Theose Elwin, Mech. Eng.	Westerly.
Wansker, Harry Abe, Mech. Eng.	Newtonville, Mass.

Welles, Ashbel Russell, Agr.	Wethersfield, Conn.
Williamson, James Hugh, Civ. Eng.	Newport.
Wisbey, Herbert Andrew, Agr.	Rumford.

Sophomores

Ash, Richard Palmer, Elec. Eng.	Bridgewater, Mass.
Barton, Henry, Jr., Civ. Eng.	Bristol.
Blake, Nelson Everett, Chem. Eng.	Wallingford, Conn.
Brightman, Melvin Hazard, Agr.	Edgewood.
Brown, Albertus Bruce, Elec. Eng.	Mystic, Conn.
Brucker, Carl Vincent, Appl. Sci.	Westerly.
Call, Roy Porter, Appl. Sci.	Lynn, Mass.
Cameron, Lorne Atwood, Agr.	Dorchester, Mass.
Carlton, Donald Elsworth, Agr.	East Providence.
Chace, Marjorie Whiting, Home Econ.	North Attleboro, Mass.
Chandler, Ruth Westlake, Home Econ.	Providence.
Clowes, Lloyd Roberts, Chem. Eng.	Bristol.
Condon, John Jerome, Chem. Eng.	Bristol.
Coyne, Sarah Elizabeth, Home Econ.	Providence.
Cruikshank, John William, Civ. Eng.	Providence.
Dalzell, Charles Davies, Agr.	Wakefield, Mass.
Daneker, John Lachlan, Elec. Eng.	Edgewood.
Davis, Lloyd Warren, Chem. Eng.	Providence.
Davis, Walter Brighton, Chem. Eng.	Middletown, Conn.
Dawson, William, Civ. Eng.	Harrisville.
Devine, James Joseph, Mech. Eng.	Bridgewater, Mass.
Dodge, Rowland Sever, Agr.	Pawtucket.
Dunham, Leslie Lincoln, Agr.	Brockton, Mass.
Edmiston, Irma Rathbun, Home Econ.	East Greenwich.
Fairbanks, George Henry, Elec. Eng.	Central Falls.
Farnham, Arthur Carleton, Jr., Agr.	Providence.
Fearn, George Andrew, Appl. Sci.	Pawtucket.
Fleck, George Howard, Elec. Eng.	Providence.
Gillis, William Ellis, Appl. Sci.	East Providence.
Groves, Lester Davis, Agr.	Hope.
Guidone, Erel Linguite, Appl. Sci.	Hartford, Conn.
Haggarty, Charles William, Elec. Eng.	Allenton.
Haskell, Dorothy Estelle, Home Econ.	West Barrington.
Henry, Patrick Charles, Jr., Elec. Eng.	Providence.
Hesse, Wilhelmine Louise, Home Econ.	Providence.
Jones, Daniel Waldo, Mech. Eng.	Brockton, Mass.
Kelley, Elisabeth Agnes, Home Econ.	Cranston.
Kelly, Mark Ernest, Civ. Eng.	Providence.
Kerr, George Harry, Agr.	Lynn, Mass.
Kinney, Esther Lee, Home Econ.	Kingston.
LeBœuf, Albert Alphonse, Appl. Sci.	Fall River, Mass.

Lermond, Charles Elwyn, Elec. Eng.	East Providence.
Lewis, Elsie Ann, Home Econ	Wickford.
Lewis, Jackson Berry, Agr.	Roselle Park, N. J.
Luther, George Edward, Appl. Sci.	Pawtucket.
Lynch, Daniel Joseph, Mech. Eng.	Brockton, Mass.
Malloy, George Joseph, Mech. Eng.	North Easton, Mass.
Mariani, Valentine Harry, Civ. Eng.	Providence.
Martell, Numan Allen, Elec. Eng.	North Attleboro, Mass.
Mason, Charles Everett, Agr.	Bristol.
Mayer, Albert Rosaire, Elec. Eng.	Providence.
Meyer, Arthur Henry Frederick, Chem. Eng.	Providence.
Milcke, Alan Wolfram, Elec. Eng.	Wallingford, Conn.
Miller, Clara Katharine, Home Econ.	Pawtucket.
Mitchell, James Albert, Elec. Eng.	Oakland.
Moore, Harold Quentin, Mech. Eng.	Westerly.
Murray, Ruth Goodwin, Home Econ.	Bristol.
Nichols, Ruhamah Robinson, Home Econ.	Slocum.
Paine, Walter Thomas, Mech. Eng.	Warwick.
Pelosi, Anthony Ralph, Mech. Eng.	Providence.
Riley, Henry Irving, Elec. Eng.	North Attleboro, Mass.
Roun, Carl David, Appl. Sci.	Hillsgrove.
Slauson, Frederick Charles Thatcher, Chem. Eng.	Winsted, Conn.
Small, Kleon Flynt, Appl. Sci.	Providence.
Smith, Lester Lawrence, Elec. Eng.	Noank, Conn.
Spargo, Raymond Alexander, Agr.	Westerly.
Springer, Franklin Hoxsie, Appl. Sci.	Bristol.
Stillman, Hannah Amelia, Home Econ.	Westerly.
Stone, Albert, Appl. Sci.	Meshanticut.
Strand, Henry Richard, Agr.	Brockton, Mass.
Torgan, Milton, Appl. Sci.	East Providence.
Walker, Frederick Earle, Civ. Eng.	Arlington.
Walsh, James Russell, Mech. Eng.	Fall River, Mass.
Wansker, Joseph, Chem. Eng.	Newtonville, Mass.
Wells, Lester Earl, Elec. Eng.	Norwood.
Wilder, Harold Kenneth, Chem. Eng.	North Leominster, Mass.
Wood, David Lamson, Jr., Elec. Eng.	Pawtucket.
Woolf, Peter Jerome, Civ. Eng.	Providence.

Freshmen

Arnold, Everett Perry, Appl. Sci.	Wakefield.
Arnold, Harold Stuart, Eng.	Providence.
Atkins, Horace Kelsey, Appl. Sci.	Pleasant Lake, Mass.
Baker, Sprague Sanborn, Appl. Sci.	Brockton, Mass.
Barnard, Paul Dunham, Agr.	Providence.
Bartlemo, Thomas, Appl. Sci.	Hughesdale.
Bauldry, Carleton Ellsworth, Appl. Sci.	Fairhaven, Mass.
Benish, Theodore Albert, Agr.	Perth Amboy, N. J.

Benjamin, Alfred Gould, Eng.	East Greenwich.
Bögholt, Carl Miller, Agr.	Newport.
Boynton, Joseph Powers, Appl. Sci.	Campello, Mass.
Brierley, Ralph Ernest, Eng.	Newport.
Briggs, Leverett Asa, Eng.	Ashaway.
Brown, Reuben Wendell, Eng.	Exeter.
Burdick, Carl Amos, Eng.	Watch Hill.
Burgess, Esther Williams, Home Econ.	Greenville.
Burgess, Freeman Edgar, Eng.	Brockton, Mass.
Burgess, Wayland McColley, Eng.	North Scituate.
Caplan, Israel, Appl. Sci.	Providence.
Cargill, Daniel Olney, Eng.	Valley Falls.
Carpenter, Curtis Tingley, Appl. Sci.	North Attleboro, Mass.
Carpenter, Edward Leroy, Eng.	Peace Dale.
Carpenter, Philip Martin, Eng.	Peace Dale.
Chapin, Frank Lysander, Eng.	New London, Conn.
Chase, Allen Payson, Eng.	Apponaug.
Chmielewski, Eugene Chester, Appl. Sci.	Olneyville.
Clapp, Revere Elliott, Eng.	Westerly.
Clark, Arthur Lincoln, Agr.	Kingston.
Clary, Stanley Woodbert, Agr.	Pawtucket.
Cohen, Samuel Harry, Eng.	Conimicut.
Colwell, Samuel Greene, Eng.	Providence.
Cook, William Stanton, Appl. Sci.	Woonsocket.
Creedon, Michael Vincent, Eng.	Brockton, Mass.
Cross, Albert Stanley, Appl. Sci.	Providence.
Crossman, Dalton Packard, Appl. Sci.	Dighton, Mass.
Damon, Elizabeth Elmore, Appl. Sci.	Kingston.
Damon, Louise Elmore, Home Econ.	Kingston.
Davis, Russell Henry, Appl. Sci.	North Attleboro, Mass.
Day, Earle Sumner, Eng.	Providence.
Dickie, Oscar Dougald, Eng.	East Providence.
Donnelly, Dudley St. Clair, Appl. Sci.	New London, Conn.
Dowling, John Joseph, Eng.	Providence.
Eastwood, Edmund Cecil, Agr.	Providence.
Fassett, Gardner Luther, Appl. Sci.	Somerset, Mass.
Ferguson, George Lester, Eng.	Peace Dale.
Fritz, Carl Edwin, Eng.	Providence.
Gamble, Edward Henry, Eng.	Pawtuxet.
Gardner, Anna Peckham, Home Econ.	Saunderstown.
Gardner, Harold Adino, Agr.	Phenix.
Goldstein, Israel, Eng.	Providence.
Gray, Willard Avery, Appl. Sci.	New London, Conn.
Hammond, Frank Gilbert, Eng.	Lafayette.
Hanson, Oscar Eugene, Agr.	Providence.
Harrington, Herman Battey, Agr.	Providence.
Harrington, Ralph Eldon, Eng.	Providence.
Hefty, William, Appl. Sci.	Lynn, Mass.

Higgins, Madeleine Regina, Home Econ.	Pawtucket.
Hildreth, Charles Tew, Eng.	Newport.
Hiscoe, Warren Ernest, Agr.	Brockton, Mass.
Holley, Arthur Tucker, Agr.	Wakefield.
Hope, Raymond Alpheus, Agr.	Hyde Park, Mass.
Hopkins, Perry Horton Baker, Eng.	Providence.
Hoyt, Olive Frances, Home Econ.	Wakefield.
Hudson, Albert Sprague, Agr.	Harris.
Hunt, Arthur Balch, Agr.	East Providence.
Irons, Merrilla Althea, Home Econ.	North Scituate.
Keeagan, Leslie Arthur, Agr.	Providence.
Kelley, Robert Vincent, Eng.	Woonsocket.
Kimball, George Pryce, Eng.	Providence.
Kinney, Helen Wells, Home Econ.	Kingston.
Knight, Howard Preston, Eng.	Westerly.
Knott, James Edward, Agr.	East Greenwich.
Kohlberg, Rudolph Horton, Agr.	Providence.
Livingston, David Hood, Eng.	Pawtucket.
Marshall, Annie Iona, Home Econ.	Bristol.
Marx, Howard Earle, Eng.	Providence.
McKenzie, Daniel Bartlett, Eng.	Essex, Mass.
Miller, Helen Frances, Appl. Sci.	Narragansett Pier.
Monahan, Leo Clement, Appl. Sci.	Wakefield.
Mudge, Harold Clifton, Eng.	Providence.
Murphy, Maurice Vincent, Eng.	Brockton, Mass.
Nass, Louis, Appl. Sci.	Newark, N. J.
Nichol, Edna Frances, Home Econ.	Woonsocket.
Northup, Kenneth LeRoy, Eng.	Kingston.
O'Brien, Charles Francis, Eng.	Shelburne Falls, Mass.
Pearson, Harold Charles, Eng.	Lynnfield Center, Mass.
Peterson, Thurston Waldemar, Eng.	Pawtucket.
Quinn, Edward James, Appl. Sci.	Wallingford, Conn.
Ramsbottom, Florence Elizabeth, Home Econ.	Pawtucket.
Randall, Lester Deloss, Agr.	Providence.
Reid, Earl Winslow, Eng.	Brockton, Mass.
Reid, Fred Gavin, Agr.	Wakefield, Mass.
Rioux, Raymond Joseph, Eng.	Edgewood.
Robertson, Alexander Barclay, Eng.	Westerly.
Rooney, Malcolm Francis, Appl. Sci.	Brockton, Mass.
Satti, Charles John, Appl. Sci.	New London, Conn.
Scott, Philip Edwin, Agr.	Providence.
Seabury, Douglas Beveridge, Agr.	Providence.
Shepard, George Searle, Agr.	North Easton, Mass.
Shippee, Florence Louise, Home Econ.	Providence.
Smith, Priscilla DaCosta, Home Econ.	Woonsocket.
Spencer, Leander Burnside, Jr., Eng.	East Greenwich.
Sullivan, Charles McManus, Eng.	Providence.
Tefft, Willet Robert, Agr.	Wakefield.

Thornton, Albert Angell, Agr.	Johnston.
Thorpe, Elliott Raymond, Eng.	Westerly.
Towne, Preston Wayland, Agr.	Oak lawn.
Trimble, George, Appl. Sci.	Wakefield.
Tweedell, William Theodore, Agr.	Pawtuxet.
Walker, William Joseph, Appl. Sci.	Providence.
Watts, James Orient, Eng.	Narragansett Pier.
Waugh, George Lincoln, Agr.	Lonsdale.
Weeks, Ralph Martin, Eng.	Groton, Conn.
Wheeler, John Edward, Agr.	South Easton, Mass.
Wicks, Elinor Gertrude, Home Econ.	Pawtucket.
Wilbourn, Vernon James, Appl. Sci.	Providence.
Wood, William Havens, Appl. Sci.	Slocums.
Woods, Frederic Mansur, Appl. Sci.	West Bridgewater, Mass.
Wosko, Casimir Andrew, Appl. Sci.	Providence.
Wrubleski, Alexander John, Eng.	Providence.
Young, Margera Lenore, Home Econ.	Westerly.

Irregulars

Aylsworth, Robert Miller, Agr.	Foster Centre.
Henderson, Margaret.	Kingston.
Leiboff, Samuel Leo, Sci.	Westerly.
Miller, Caroline.	Kingston.
Miller, Marie.	Kingston.
Perlow, Lucy, Home Econ.	Providence.
Rice, Clifford Murdock, Agr.	Brockton, Mass.
Savage, Philip Joseph.	New London, Conn.
Schermerhorn, Katharine Brown, Home Econ.	Kingston.
Shallcross, William.	Central Falls.
Sohn, Herman Henry.	Providence.

Two-Year Course in Agriculture

Brooks, Frank Raymond.	East Providence.
Cottrell, George Howland.	Tiverton.
Crandall, Julian Titsworth.	Ashaway.
Douglass, Melvin Loren.	Groton, Conn.
Fernandez, John Henry.	North Tiverton.
Gadoury, Henry Arthur.	Crompton.
Kent, Earle Henry.	Kingston.
Martin, John.	Providence.
Miner, Owen Stewart.	Groton, Conn.
O'Brien, James.	Woonsocket.
Spaulding, Harold Manning.	Woonsocket.
Whritner, Philip Penhale.	Providence.
Winter, George Alden.	Greenwood.

Special Poultry Course

Arnold, Elizabeth M.	Washington.
Atkinson, Robert.	Alton.
Chapman, Leon H.	Saylesville.
Davis, Fred B.	Slocum.
Mellor, Mrs. E. N.	Bristol.
Michels, John.	Kingston.
Stone, Ernest Cole.	Kingston.

Summary

Graduates.	4
Seniors.	41
Juniors.	38
Sophomores.	78
Freshmen.	121
Irregulars.	11
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	293
Two-Year Course.	13
Special Poultry Course.	7
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Total.	313

Graduates *

1894

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD . . . Kingston.	Agr.	Professor of Agronomy, R. I. S. C.
AMMONDS, GEORGE CLARENCE . . 54 Eliot St., Boston, Mass.	Mech.	Railroad Postal Clerk, on N. Y., N. H. & H. R. R.
ARNOLD, CHAPIN TRAFFORD . . . Box 57, Providence.	Agr.	Electrical Contractor, Office 26 Custom House St., Providence.
BURLINGAME, GEO. WASHINGTON . R. F. D. No. 2, Box 56, North Scituate.	Agr.	Farmer and Teacher.
CLARK, HELEN MAY (Mrs. Wm. F. B. LEAVITT), B. L., Smith Col- lege, 1899. Essex Fells, New Jersey.		At home.
KNOWLES, JOHN FRANKLIN . . . Narragansett Pier.	Mech.	With The Bristow Bros., Knowles Corporation.
†MADISON, WARREN BROWN . . .	Agr.	
MATHEWSON, ERNEST HOXSIE . . Ph. B., Brown University, 1896. Reidsville, North Carolina.	Mech.	Crop Technologist in Tobacco, U. S. Department of Agriculture.
PECKHAM, REUBEN WALLACE . . . 15 Bay View Ave., Newport.	Agr.	Market Gardener Salesman.
RATHBUN, WILLIAM SHERMAN . . . 38 Forest St, Willimansett, Mass.	Agr.	Proof-Reader, Eureka Blank Book Co., Holyoke, Mass.
RODMAN, GEORGE ALBERT . . . New Haven, Conn.	Mech.	General Supervisor, Bridges and Buildings, Union Station, N. Y., N. H. & H. R. R. Co.
SARGENT, CHARLES LAWRENCE . . Ph. D., University of Pennsylvania, 1900. 9 Thomas St., Newark, New Jersey.	Agr.	Superintendent, Color Department, Murphy Varnish Co.
SLOCUM, SAMUEL WATSON . . . 60 Summer St., Westerly.	Agr.	Instructor of Woodwork, Westerly Schools.
SPEARS, JOHN BARDEN . . . Foster Centre.	Agr.	Rural Letter Carrier.

*It is earnestly desired that graduates inform the college office of any permanent change of address.

† Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SWEET, STEPHEN ADELBERT . . . Slocums.	Agr.	Farmer.
TUCKER, GEORGE MASON . . . Ph. D. Göttingen, 1899. Forest Glen, Md.	Agr.	Editorial Staff, Experiment Station Record, U. S. Department of Agriculture, Washington, D. C.
WILBUR, ROBERT ARTHUR . . . East Greenwich.	Mech.	Carriage-maker and blacksmith.

1895

*ALBRO, LESTER FRANKLIN . . .	Agr.	
BURDICK, HOWLAND . . . Kingston.	Agr.	Assistant Professor of Dairying, R. I. S. C.
CLARKE, CHARLES SHERMAN . . . Jamestown.	Mech.	Marine Engineer.
ELDRED, MABEL DEWITT . . . Kingston.		Instructor in Drawing, R. I. S. C.
HAMMOND, JOHN EDWARD . . . Jamestown.	Agr.	Farmer.
OATLEY, LINCOLN NATHAN . . . Wakefield.	Mech.	Contractor and builder; Coal Dealer.
SCOTT, ARTHUR CURTIS . . . Ph. D., Univ. of Wisconsin, 1902. 632 Wilson Bld'g., Dallas, Texas.	Mech.	President, Scott Engineering Co.,
TEFFT, JESSE COTTRELL . . . Jamestown.	Mech.	Purser, Newport and Jamestown Ferryboat Co.
WINSOR, BYRON EDGAR . . . Coventry.	Mech.	Poultryman.

1896

BROWN, MAY (MRS. CHARLES A. WHITE). Narragansett Pier.		At home.
GREENMAN, ADELAIDE MARIA (MRS. R. WALLACE PECKHAM) . Melville Station, Newport.		At home.
KENYON, ALBERT LEWIS . . . 35 Chestnut St., South Manchester, Conn.	Mech.	In business.
MOORE, NATHAN LEWIS CASS . . Venice, Florida.	Agr.	Fruit-grower, citrus culture.
TABOR, EDGAR FRANCIS . . . 39 Everett St., Southbridge, Mass.	Mech.	Foreman Printer, The Southbridge Printing Co.
*WILLIAMS, JAMES EMERSON . .	Agr.	

* Deceased.

1897

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS . Shannock.	Sci.	Bookkeeper, Providence Journal Co., Providence
CASE, HERBERT EDWARDS BROWN . Ph. B., Brown University, 1900. Graduate, Hartford Theological Seminary, 1904. 14 Beacon St., Boston, Mass.	Mech.	Assistant, Foreign Department, Amer. Board of Commissioners for Foreign Missions.
GRINNELL, ARCHIE FRANKLIN . 96 Patterson St., New Brunswick, N. J.	Mech.	Draftsman, Simplex Auto Co.
HANSON, GERTRUDE MAIE . . . Westerly.	Sci.	Principal of Schools, Wakefield
HOXSIE, BESSIE BAILEY (MRS. E. F. RUECKERT) . . . 98 Melrose St., Providence.	Sci.	At home.
KENYON, ALBERT PRENTICE . . . 23 Courtland St., Westerly.	Mech.	Bookkeeper, Maxson & Co., West- erly.
KENYON, CHARLES FRANKLIN . Shannock.	Mech.	Engineer.
LARKIN, JESSIE LOUISE 98 Beach St., Westerly.	Sci.	Genealogist.
*MARSLAND, LOUIS HERBERT . . .	Mech.	
TEFFT, ELIZA ALICE Exeter Hill.	Sci.	Teacher.
THOMAS, IRVING Slocums.	Mech.	Designer of Patterns.

1898

ARNOLD, SARAH ESTELLE (MRS. R. O. BROOKS) 975 East 18th St., Brooklyn, N. Y.	Sci.	At home.
BARBER, GEORGE WASHINGTON . Glendora, Cal.	Agr.	Rancher.
CARGILL, EDNA MARIA (MRS. LESTER H. BROWN) . . . 4 Highland Ave., Lonsdale.	Sci.	At home.
CASE, JOHN PETER 251 Monadnock Bldg., San Fran- cisco, Cal.	Agr.	Mgr., Western Office, Brown Hoist- ing Machinery Company.
CLARK, WILLIAM CASE Wakefield.	Sci.	General Manager, Narragansett Pier Elec. Light and Power Co.; Mgr., Wickford Light and Water Co.; Div. Supt., Rhode Island Co.
CONGDON, HENRY AUGUSTUS . . . Kingston.	Mech.	Farmer.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FLAGG, MARTHA REBECCA . . Abbott Run.	Sci.	At home.
HARLEY, WILLIAM FERGUSON . 23 Summit Ave., Providence.	Agr.	Buyer, with Messrs. Callender, McAuslan & Troup, Providence.
TURNER, HARRIETTE FLORENCE (MRS. GEO. M. TUCKER) . . Graduate, Drexel Institute, 1900. Forest Glen, Md.	Sci.	At home.
WILSON, GRACE ELLEN (MRS. W. F. HARLEY) . . . 23 Summit Ave., Providence.	Sci.	At home.

1899

BOSWORTH, ALFRED WILLSON . A. M., Harvard University, 1913, 167 Park St., West Roxbury, Mass.	Sci.	Biological Chemist, Boston Floating Hospital.
BROOKS, RALPH ORDWAY . . . 975 East 18th St., Brooklyn, N. Y.	Sci.	Consulting Chemist, Bacteriologist, Microscopist, Food-Inspection Expert, 191 Franklin St., New York City.
GEORGE, LILLIAN MABELLE . . A. B., Univ. Illinois, 1904. Graduate, N. Y. State Library School, 1910. 135 N. 26th St., Corvallis, Ore.	Sci.	Cataloguer, Oregon Agricultural College Library.
HARVEY, MILDRED WAYNE (MRS. WM. H. BLISS) . . . 407 W. 123rd St., New York City.	Sci.	At home.
KENYON, BLYDON ELLERY . . . 632 Wilson Bldg., Dallas, Texas.	Agr.	Consulting Engineer.
KNOWLES, CARROLL 77 Chiswick Road, Edgewood.	Mech.	Chief Tool Designer, Brown & Sharpe Mfg. Co.
KNOWLES, HARRY Ph. B., Brown University, 1906. 500 Todd St., Wilkesburg, Pa.	Sci.	Publicity Dept., Westinghouse Elec. & Mfg. Co.
LADD, MERRILL AUGUSTUS . . Jacksonville, Fla.	Mech.	Sales Manager, Florida Electric Co.
MORRISON, CLIFFORD BREWSTER . New Haven, Conn.	Sci.	Assistant Chemist, Conn. State Experiment Station.
OWEN, WILLIAM FRAZIER . . . Schenectady, N. Y.	Mech.	Engineering Department, General Electric Co.
PAYNE, EBENEZER M. D., Univ. Michigan, 1904. Glendora, Cal.	Sci.	Orange Grower.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
PHILLIPS, WALTER CLARKE . . Ph. B., Brown University, 1902. A. M., Brown University, 1903. Providence.	Mech.	Instructor in English, Brown University.
REYNOLDS, ROBERT SPINK . . Room 314, Gen. Office Bldg., New Haven, Conn.	Mech.	Assistant Engineer, Bridge Dept., N. Y., N. H. & H. R. R. Co.
RICE, MINNIE ELIZABETH (MRS. ROBERT J. SHERMAN) . . Exeter Hill.	Sci.	At home.
SHERMAN, ABBIE GERTRUDE (MRS. BENJAMIN BARTON) . . 56 Pavilion Ave., Providence.	Sci.	At home.
*SHERMAN, GEORGE ALBERT . .	Mech.	
THOMPSON, SALLY RODMAN (MRS. LEWIS BALCH, JR.) . . Wakefield.	Sci.	At home.

1900.

BRIGHTMAN, HENRY MAXSON . . Room 1706, 52 Vanderbilt Ave., New York City.	Mech.	Drying Expert, with B. F. Sturtevant Co.
CROSS, CHARLES CLARK . . . Detroit, Mich.	Mech.	Factory Manager, Saxon Motor Co.
ELDRED, JOHN RALEIGH . . . Kingston.	Mech.	Instructor in Mechanical Engineering, R. I. S. C.
FISON, GERTRUDE SARAH (MRS. JOHN W. ROOT) . . . 139 Fresh Pond Parkway, Cambridge, Mass.	Sci.	At home.
FRY, JOHN JOSEPH Greenwich, Conn.	Sci.	Supervising Principal, Byram School and Hamilton Avenue School.
GODDARD, EDITH (MRS. LAWRENCE B. REED) . . 20 North St., Plymouth, Mass.	Sci.	At home.
KENYON, AMOS LANGWORTHY . . Wood River Junction.	Agr.	Dairyman.
MUNRO, ARTHUR EARLE . . . Ph. B., Brown University, 1902. 41 George St., Providence.	Sci.	Attorney-at-Law, 49 Westminster St.
SOULE, RALPH NELSON 384 Montclair Ave., Detroit, Mich.	Sci.	Asst. Mgr., Service Dept., Chalmers Motor Co.
STEERE, ANTHONY ENOCH . . . 3 Mark Bldg., Amsterdam, N. Y.	Mech.	Resident Civil Engineer, Mohawk River Division.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
STILLMAN, LENORA ESTELLE . . 1046 Greene Ave., Brooklyn, N. Y.	Sci.	Teacher.
TUCKER, BERTHA DOUGLASS . . R. F. D. No. 2, Box 105, Swansea, Mass.	Sci.	Dressmaker.
WHEELER, CHARLES NOYES . . 97 Garden St., Pawtucket.	Sci.	Clerk, Wm. H. Haskell Manufact- uring Co.
WILSON, JOSEPH ROBERT . . . Allenton.	Mech.	Surveyor.

1901

BRAYTON, CHARLES ANDREW . . Hope, R. F. D.	Agr.	Farmer.
BRIGGS, NELLIE ALBERTINE . . Providence.	Sci.	Stenographer, R. I. Hospital Trust Co.
BURGESS, CHARLES STUART . . 264 Sayles St., Providence.	Mech.	Draughtsman, Brown & Sharpe Mfg. Co.
CLARNER, LOUIS GEORGE KARL, JR. 68 Granite Ave., Dorchester, Mass.	Sci.	Insurance Engineer, N. E. Bureau of United Inspection.
DAWLEY, EDNA ETHEL . . . (MRS. GEORGE W. WHITFORD) West Kingston, R. F. D., Box 80.	Sci.	At home.
DENICO, ARTHUR ALBERTUS . . Ph. B., Brown Univ., 1904. 521 West 185th St., New York City.	Sci.	Traffic Engineer, with American Telephone and Telegraph Co.
*JAMES, RUTH HORTENSE (Mrs. HERBERT E. ROUSE) . .	Sci.	
SHERMAN, ANNA BROWN . . . 49 Roger Williams Ave., Providence.	Sci.	Publisher.
SHERMAN, ELIZABETH AGNES . . 424 Mass. Ave., Boston, Mass.	Sci.	Secretary to Research Chemist, Arthur D. Little, Inc., Boston.
SMITH, HOWARD DEXTER . . . A. M., Brown University, 1904. Ph. D., Tufts College, 1906. 30 Hawthorne St., Lowell, Mass.	Sci.	Instructor in Chemistry, Lowell Textile School.
STEERE, ROWENA HOXSIE . . . 102 Sassafras St., Providence.	Sci.	Stenographer.
*WILBY, JOHN	Sci.	

1902

CLARKE, LATHAM A. M., Brown University, 1903. Ph. D., Harvard University, 1905. Montevideo, Uruguay.	Chem.	Director, Instituto de Quimica In- dustrial.
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NAME AND ADDRESS.	COURSE.	OCCUPATION.
FERRY, OLIVER NEEDHAM . . . 30 Stuart St., New Britain, Conn.	Mech.	Mechanical Supt., Corbin Screw Division.
MAXSON, RALPH NELSON . . . Ph. D., Yale University, 1905. 366 Transylvania Park, Lexington, Ky.	Chem.	Professor Inorganic Chemistry, State University.
PITKIN, ROBERT WILLIAM . . . Rockville, Conn., R. F. D. No. 1.	Mech.	Farmer.

1903

BARBER, KATE GRACE (MRS. A. L. WINTON) . . . Ph. D., Yale University, 1906. 1322 Vermont Ave., Washington, D. C.	Gen. Sci.	Investigations in Vegetable Histology.
CONANT, WALTER AIKEN . . . Temple, N. H.	Agr.	Dairying, The Conant and Clement Farms, Hillsboro County.
GODDARD, WARREN, JR. . . . Graduate, New Church Theological School, 1907. 905 Linwood St., La Porte, Indiana.	Mech.	Pastor, New Church.
KEEFER, EDITH CECILIA . . . 260 West 57th St., New York City.	Biol.	Teacher of Mathematics, Miss Spence's School.
KENT, RAYMOND WARREN . . . A. M., Harvard University, 1904. East Palestine, Ohio.	Chem.	Chemist, Maguire Rubber Co.
TEFFT, ERNEST ALLEN . . . 85 Larch St., Providence.	El. Eng.	Electrical Contractor, 87 Westminster St.

1904

BALLOU, WILLARD ALGER . . . B. S., Columbia Univ., 1913. M. A., Columbia Univ., 1915. 335 Lafayette Ave., Brooklyn, N. Y.	Biol.	Instructor in Mathematics, Pratt Institute.
QUINN, MARY LOUISE Wakefield.	Biol.	Teacher of Science.
RODMAN, WALTER SHELDON . . . M. S., R. I. C. A. & M. A., 1907. M. S., Mass. Inst. Tech., 1909. 1201 W. Main St., University, Va.	El. Eng.	Associate Professor of Electrical Engineering, University of Virginia.

1905

CHAMPLIN, SARAH ELIZABETH . . . MRS. HAROLD L. FRIEND) 306 Smith St., Edgewood.	Gen. Sci.	At home.
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NAME AND ADDRESS.	COURSE.	OCCUPATION.
DOW, VICTOR WELLS . . . 6 Tyler St., Hampton, Va.	High. Eng.	Teacher.
GILMAN, JEAN Hampton, Va.	High. Eng.	Assistant to Director of Trade School, Hampton Institute.
HARRALL, NELLIE ARMSTRONG. (Mrs. B. H. ARNOLD) . . . Graduate, Sargent School of Physical Education, 1909. 555 West 10th St., Erie, Pa.	Gen. Sci.	At home.

1906.

ARNOLD, BENJAMIN HOWARD . . 555 West 10th St., Erie, Pa.	El. Eng.	Supervisor of Tests, Erie Works, General Electric Co.
BERRY, WALLACE NOYES . . . Albuquerque, New Mexico.	El. Eng.	With Albuquerque Gas, Electric Light and Power Co.
ELKINS, MARION GRAHAM . . . Ph. D., Yale University, 1912. 10 Moody St., Amesbury, Mass.	Gen. Sci.	At home.
HARDING, LEE LAPLACE . . . 138 Mt. Vernon St. Fitchburg, Mass.	High. Eng.	Instructor in Mathematics, Fitch- burg High School.
KEYES, FREDERICK GEORGE . . . Sc. M., Brown Univ., 1907. Ph. D., Brown Univ., 1909. 42 Carnegie Ave., East Orange, N. J.	Chem.	Chemist.
NICHOLS, HOWARD MARTIN . . . 64 Clifford St., Readville, Mass.	El. Eng.	Engineer, B. F. Sturtevant Co.
SISSON, CORA EDNA M. S., Brown Univ., 1910. 164 Washington St., Kingston, N. Y.	Gen. Sci.	Instructor in Biology, Ulster Academy.
WILKINSON, ALBERT EDMUND . . 309 Stewart Ave., Ithaca, N. Y.	Agr.	Extension Instructor in Vegetable Gardening, Cornell University.

1907.

BARBER, ARTHUR HOUGHTON East Greenwich.	Mech. Eng.	Inspector for Associated Factory Mutual Fire Insurance Cos., Boston, Mass.
COGGINS, CALVIN LESTER . . . Kingston.	El. Eng.	Assistant Professor of Physics and Elec. Eng., R. I. S. C.
FERRY, JAY RUSSELL 677 Rutherford Ave., Trenton, N. J.	High. Eng.	Draftsman, American Bridge Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
KELLOGG, DAVID RAYMOND . . . Ph. D., Ohio State University, 1912. Anaconda, Montana.	Chem.	Asst. Physical Chemist, Bureau of Mines.
KENDRICK, WINFIELD SMITH . . . 231 Parkwood Boulevard, Schenectady, N. Y.	El. Eng.	Specialist, General Electric Co.
LAMOND, JOHN KENYON . . . M. A., Yale Univ., 1908. Ph. D., Yale Univ., 1910. 38 Brainerd Ave., Middletown, Conn.	El. Eng.	Associate Professor of Mathematics, Wesleyan University.
LEWIS, HARRY REYNOLDS . . . 17 Jones Ave., New Brunswick, N. J.	Agr.	Professor, Dairying and Poultry Husbandry, Rutgers College.
MACOMBER, MINER SANFORD . . . Oconomowoc, Wisconsin.	Chem.	Chemist, with Pacific Coast Con- densed Milk Co.
TUCKER, ETHEL ALDRICH (MRS. LITILETON C. HAYDEN) 28 Sadler Ave., Pittsfield, Mass.	Gen. Sci.	At home.

1908

DREW, JOSEPH DRAKE . . . 2010 Avenue H, Ensley, Alabama.	Chem.	Chemist, Tenn. Coal, Iron & R. R. Co.
FIELD, CLESSON HERBERT . . . C. E., Lehigh Univ., 1909. 223 Loring Ave., Buffalo, N. Y.	Civ. Eng.	Head of Dept. Structural Design, Buffalo Technical High School.
FISKE, HERBERT ANDREW . . . 112 Mt. Pleasant St., New Bedford, Mass.	El. Eng.	Electrician for Beacon Mfg. Co.
GARDINER, ROBERT FRANKLIN . . . M. S., George Washington University, 1914. Box 344, Clarendon, Va.	Chem.	Asst. Chemist, Bureau of Soils, U. S. Dept. of Agriculture.
GORY, EDWARD ALLEN . . . 72 Canterbury St., Dorchester, Mass.	El. Eng.	Assistant, Shop Electric Plant, General Electric Co., Lynn, Mass.
KENYON, SUSAN ELNORA (MRS. FRED K. CRANDALL) . . . Westerly.	Biol.	At home.
MITCHELL, CLOVIS WILLIAM . . . 147 Wentworth Ave., Providence.	Civ. Eng.	Instructor in Science, English High School.
ROSE, ORPHA LILLIE (MRS. HENRY A. CONGDON) Kingston.	Gen. Sci.	Teacher.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SHERMAN, MARY ALBRO . . . (MRS. FRED M. MANLY) West Fairlee, Vt.	Agr.	At home.
SMITH, JOHN LEBROC . . . 148 Magnolia St., Auburn.	El. Eng.	Head of Science Dept., Cranston High School.
WHIPPLE, LUCIUS ALBERT . . 19 Walker Ave., Saylesville.	Civ. Eng.	Superintendent of Schools, Town of Lincoln.

1909

CARGILL, RHOBIE LUCELIA . .	Appl. Sci.	Teacher of Mathematics, Technical High School.
183 Pearl St., Providence.		
CRAIG, JAMES MCINTYRE . . .	Agr.	Gardener and Merchant.
Santa Fe, 1074 Rosario, Argentine.		
CRANDALL, FRED KENYON . . .	Agr.	Farmer.
Westerly.		
FRENCH, HENRY FRANK . . .	El. Eng.	Turbo-Generator Engineer, General Electric Co.
20 Bennett Circle, Lynn, Mass.		
HOWE, ALBERT MENDEL . . .	El. Eng.	Assistant General Foreman, Repair Dept., Bay State St. Ry. Co.
1 Rockland St. Brockton, Mass.		
KNOWLES, WALTER . . .	Civ. Eng.	Construction Dept., N. Y., N. H. & H. R. R. Co.
Kingston.		
LEE, ALFRED ROGERS . . .	Agr.	Junior Animal Husbandman, in Poultry Investigations, Bureau of Animal Industry, U. S. Dept. of Agriculture.
2513 N. Capitol St., Washington, D. C.		
MORAN, WALTER JOHN . . .	Civ. Eng.	Civil Engineer, N. Y., N. H. & H. R. R. Co.
Gen. Del., New London, Conn.		
MOYER, LOUIS EARL . . .	Civ. Eng.	Civil Engineer, Dept. State Engineer, Barge Canal Office.
Seneca Falls, N. Y.		
ROCKWELL, RUBY BELLE . . .	Chem.	At home.
Troy, Pa.		
SMITH, ELMER FRANCIS . . .	El. Eng.	Principal, Roselle Park High School.
311 Chestnut St., Roselle Park, N. J.		
TISDALE, HARRY ROBERT . . .	Chem.	Chemist, Brainerd & Armstrong, Mass. Inst. Technology, 1911.
360 Broad St., New London, Conn.		Silk M'f'rs.
TUCKER, ELLEN CAPRON . . .	Gen. Sci.	At home.
Kingston.		

1910

BURGESS, PAUL STEERE . .	Chem. Eng.	Chemist, with Hawaiian Sugar M. S., University of Illinois, 1911.
Honolulu, Hawaii.		Planters Association.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARPENTER, RANDOLPH HAYWOOD 3015 Farragut Road, Brooklyn, N. Y.	El. Eng.	Sales Engineer, Westinghouse Electric & Mfg. Co., 165 Broadway.
CUMMINGS, ROBERT WINTHROP 940 Madison Ave., Bridgeport, Conn.	Mech. Eng.	Ass't. Engineer, Remington Arms Co.
GOODALE, RALPH WALDO 921 Howard Ave., New Haven, Conn.	Civ. Eng.	Draftsman, Real Estate Dept., N. Y., N. H. & H. R. R. Co.
HARDY, JOHN IRA 507 High St., Columbia, Mo.	Gen. Sci.	Grad. Student, University of Missouri.
HEATH, BERTHA MAY Lunenburg, Mass.	Agr.	Teacher, Kingston.
KENYON, AMOS HARRIS Camp Hill, Pa.	El. Eng.	Asst. Traffic Chief, American Tel. & Tel. Co., Harrisburg, Pa.
LAMOND, HELEN SCOTT (MRS. R. H. CARPENTER) 3015 Farragut Road, Brooklyn, N. Y.	Gen. Sci.	At home.
MOUNCE, LEROY LEIDMAN South Woodstock, Vt.	Agr.	Farming.
PEABODY, GEORGE ABBOTT Schenectady, N. Y.	El. Eng.	In Electrical Construction Dept., General Electric Co.
SHERMAN, JOHN LELAND 1802 G. St., N. W., Washington, D. C.	Agr.	In Farm Management Bureau, U. S. Dept. of Agriculture.
SMITH, HIRAM JAMESON Palmer, Mass.	Civ. Eng.	Resident Engineer, Southern New England Railroad.
WAGNER, ALBERT FREDERIC M. S., Purdue Univ., 1913. 415 Russell St., Lafayette, Indiana.	El. Eng.	Instructor in Physics, Purdue University.
WHEELER, RICHARD HOWES 411 Dorchester St., West, Montreal, Canada.	El. Eng.	Asst. Electrical Engineer, Canadian Northern Railway.
WORRALL, DAVID ELBRIDGE M. A., Harvard Univ., 1911 24 Belmont Ave., Northampton, Mass.	Chem.	Instructor in Chemistry, Smith College.

1911

ANDREWS, CARMEN NICHOLS Slocums.	Appl. Sci.	Teacher.
ANGILLY, CHARLES ENOCH, JR. 1016 W. 23d St., Los Angeles, Cal.	Civ. Eng.	Computer, Joint Bureau of Appraisal, L. A. County.
EASTERBROOKS, HAROLD ARNOLD 280 Benefit St., Providence.	Biol.	In business.
EASTERBROOKS, LOUIS CHURCH 280 Benefit St., Providence.	Agr.	In business.
GILCREST, CLYDE RONALD 1172 South Ave., Wilkesburg, Pa.	Elec. Eng.	Detail and Supply Dept., Westinghouse Electric and Manufacturing Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HARRIS, BURTON KENNETH . R. F. D., Saylesville.	Chem. Eng.	Lime Manufacturer and Chemist.
HEALY, PATRICK JOSEPH . . . Newport.	Agr.	Gardener, Mahwah, N. J.
KENT, ROBERT WILLARD . . 21 Cedar St., Pawtucket.	Mech. Eng.	Industrial Engineer, River Spinning Co., Central Control Office.
MINOR, ARTHUR JACOB . . C. E., R. I. S. C., 1915, Munsey Building, Washington, D. C.	Civ. Eng.	Asst. Engineer, Valuation Dept., Southern Railway.
NEAL, WILLIAM THOMAS . . . Walton, New York.	Agr.	Proprietor of Tripp Floral Co.
ROBINSON, BENJAMIN ROWLAND 57 Bridges Ave., Massena, N. Y.	Mech. Eng.	Engineering Dept., Aluminum Co. of America.
RUPRECHT, RUDOLF WILLIAM . M. S., Mass. Agr. College, 1914. Amherst, Mass.	Appl. Sci.	Asst. Research Chemist, Agr. Experiment Station.
SAFFORD, HOWARD ALBERT . . . National Soldiers' Home, Maine.	Agr.	Chief Gardener.
TUCKER, HARRIET TABER . . (MRS. DAVID E. WORRALL) 24 Belmont Ave., Northampton, Mass.	Gen. Sci.	At home.
WADE, CEYLON RAYMOND . . Bridgeton.	Civ. Eng.	With Interstate Commerce Commission, Division of Valuation.

1912

BARLOW, HENRY NEWELL . . Sharon, Conn.	Elec. Eng.	Dairy Farmer.
BIGELOW, CARLE MUZZY . . 711 Tremont Bld'g., Boston, Mass.	Appl. Sci.	Chief Efficiency Engineer, Cooley & Marvin Co., Accountants and Production Engineer.
CALDWELL, DOROTHY WALCOTT, M. S., R. I. S. C., 1914. Kingston.	Civ. Eng.	Assistant in Bacteriology, Experiment Station, R. I. S. C.
CLARKE, PHILIP HARRISON . . 714 Chrysler Ave., Schenectady, N. Y.	Elec. Eng.	Industrial Control Engineer, General Electric Co.
COBB, ELECTRA HENRIETTA (MRS. JOHN L. SHERMAN) Washington, D. C.	Home Econ.	At home.
DOLL, WALTER Virginia Mills, Penn.	Mech. Eng.	Plant Superintendent, Advance Industrial Supply Co.
HENDERSON, ETHEL PIERCE (MRS. E. K. WILCOX) . . 80 Williams St., New London, Conn.	Appl. Sci.	At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
KENYON, ANNIE ELIZA (MRS. S. C. WEBSTER, JR.) North Easton, Mass.	Appl. Sci.	At home.
LARKIN, CHARLES HERBERT Allenton, Pa.	Civ. Eng.	With Central Railroad of New Jersey.
NUTTING, BERTHA MAY 206 Yates Ave., Grafton, West Va.	Home Econ.	Teacher, Domestic Science, Grafton High School.
PATTERSON, ARTHUR JACOB 123 Chestnut St., Rochester, N. Y.	Elec. Eng.	Construction Engineer, General Railway Signal Co.
RICHMOND, FRED ALLEN 832 Lincoln Ave., Schenectady, N. Y.	Elec. Eng.	Electrical Test Engineer, General Electric Co.
SHERMAN, GEORGE WILLIAM, JR. M. S., Purdue Univ., 1914. 116 Sheitz St., West Lafayette, Ind.	Elec. Eng.	Instructor in Physics, Purdue University.
SLATER, ALLAE CORDELIA (MRS. ARTHUR J. MINOR) Washington, D. C.	Home Econ.	At home.
WARNER, DAVID EDMOND, JR. Storrs, Conn.	Agr.	Instructor in Poultry Husbandry,
WEBSTER, SAMUEL C., JR. North Easton, Mass.	Agr.	Instructor, Vocational Agriculture.
WHALEN, WILLIAM JOSEPH Kingston.	Appl. Sci.	Asst., Buildings Dept., R. I. S. C.

1913

ALEXANDER, RALPH IRWIN 648 West King St., York, Pa.	Mech. Eng.	Engineering Apprentice, Erecting Dept., York Mfg. Co.
BATES, REUBEN CHARLES 36 Browne St., Brookline, Mass.	Civ. Eng.	Teacher.
BRETT, CLARENCE ELMER New Brunswick, N. J.	Agr.	Instructor.
BRIDEN, FRANK HAROLD Port Hope, Ontario, Canada.	Mech. Eng.	Supt. Dominion Works, Nicholson File Co.
COHEN, BENJAMIN 423 Rebecca Ave., Wilkinsburg, Pa.	Elec. Eng.	Correspondent and Employment Agent, Westinghouse Electric & Mfg. Co.
CONGDON, ESTHER LOOMIS (MRS. ARTHUR L. REYNOLDS) Turner Falls, Mass.	Home Econ.	At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CORR, JOHN WILLIAM . . . East Greenwich.	Appl. Sci.	Assistant Superintendent, Green- wich Bleachery.
ELKINS, DOROTHY DEARBORN, Home Econ. 278 Yates St., Albany, N. Y.		Laboratory Assistant, New York State Health Dep't Laboratory.
ELKINS, MARGUERITE WHITE Home. Econ. M. S., R. I. S. C., 1914. Kingston.		Assistant in Biology, Agricultural Experiment Station.
HART, CRAWFORD PECKHAM . . . Lakeville, Conn.	Agr.	Instructor in Agriculture and Farm Manager, Riggs School.
IRONS, WALTER COLWELL . . . Kingston.	Agr.	Assistant in Agronomy, Agricul- tural Experiment Station.
KYLE, THOMAS New York.	Agr.	Plumber.
MITCHELL, IRVING CALVARY . . Greenville.	Appl. Sci.	Supt. of Schools, towns of Glocester and Smithfield.
REDDING, WILLIAM FRANCIS Caminio Nerevo, Mayaguez, Porto Rico.	Elec. Eng.	Instructor, Mech. Eng., University of Porto Rico.
REINER, WALDO 45 Strong Place, Brooklyn, N. Y.	Civ. Eng.	Turner Construction Co., 11 Broad- way, New York City.
REYNOLDS, ARTHUR LESLIE . . Turner Falls, Mass.	Elec. Eng.	Sub Master, High School.
SLOCUM, GEORGE EDWIN . . . 423 Rebecca Ave., Wilkesburg, Pa.	Elec. Eng.	Engineer, Westinghouse Electric & Mfg. Co.
STECK, FRANK Baguio Beuguet, P. I.	Chem. Eng.	Third Lieutenant Philippine Con- stabulary.
TURNER, WALTER RAYMOND . . 21 Cedar St., Pawtucket.	Appl. Sci.	Ass't Supt. River Spinning Co., Plant A., Woonsocket.
WILCOX, ERROLL KENYON . . 80 Williams St., New London, Conn.	Civ. Eng.	Instructor in Mathematics, Voca- tional High School.
WOOD, SUSIE STANTON . . . 1586 Cambridge St., Cambridge, Mass.	Home Econ.	Teacher, Domestic Science, High School.
YOUNG, JAMES HANNIBAL . . . 2005 Broad St., Providence.	Appl. Sci.	With Baker, Ayling & Co., Invest- ment Bankers.

1914

ALDRED, JAMES HILTON . . . Duxbury, Mass.	Mech. Eng.	Teacher, Powder Point School.
ANDERSON, WILLIAM EDWARD . . . 2932 Clinton St., Lincoln, Nebraska.	Agr.	Bacteriology, Experiment Station.
ASPINWALL, FREDERICK OTTO 637 Main St., Pawtucket.	Chem. Eng.	Instructor in Chemistry, Tufts College, Mass.

NAME AND ADDRESS.	COURSE.	OCCUPATION
BAXTER, FRANK HOWARD . 138 E. 38th St., New York City, N. Y.	Mech. Eng.	With A. Wimpfheimer & Bro., Fourth Ave., New York City.
BENSON, ROBERT JOHN . . . Schenectady, N. Y.	Elec. Eng.	With General Electric Co.
BOULESTER, EDWARD JAMES 617 Academy Ave., Providence.	Appl. Sci.	Chemist, Charles S. Tanner Co.
BROWNING, HAROLD WILLIAM Biology Building, Univ. of Wisconsin, Madison, Wisconsin.	Appl. Sci.	Assistant in Botany, University of Wisconsin.
CONNOR, THOMAS ROWLEY . Peacedale.	Civ. Eng.	Civil Engineer, with W. Kent.
DAVIS, HENRY ELLIS Howard.	Agr.	Military Instructor, Sockanosset School.
ESTY, JAMES RUSSELL . . . 115 Waterman St., Providence.	Chem. Eng.	Graduate Student, Brown University.
FINCH, MYRON WHITMARSH . . . 288 Elmwood Ave., Providence.	Agr.	Ass't. Physical Director, Providence Y. M. C. A.
FORD, HELEN WHEELER . . . New Ipswich, N. H.	Home Econ.	Teacher of Domestic Science, Appleton Academy.
HAWKINS, MYRON ANGELL Kingston.	Agr.	Demonstrator in Agronomy, Extension Service, R. I. S. C.
JONES, CARLTON WALTER . . . 65 Laura St., Providence.	Civ. Eng.	With Glenlyon Dye Works, Saylesville.
KARMANN, HERMAN HARRY . . . 160 Dudley St., Providence.	Civ. Eng.	Surveyor, City Engineer's Office.
KINNEY, LORENZO FOSTER . . . Kingston.	Appl. Sci.	With Lowland Rhododendron Farm.
REINER, FRIEDA 45 Strong Place, Brooklyn, N. Y.	Home Econ.	Assistant, Home Economics Dept., New Hampshire State College.
REINER, HERBERT R. F. D., Brattleboro, Vt.	Agr.	Farmer.
ROSSI, LOUIS 139 Tower St., Westerly.	Civ. Eng.	Civil Engineer and Draftsman.
SAFFORD, EDITH MARIE . . . (MRS. HERBERT REINER,) R. F. D., Brattleboro, Vt.	Home Econ.	At home.
SULLIVAN, JOHN LEO Vernon, Vermont.	Mech. Eng.	Electrical Engineer, Conn. River Power Co.
TULLY, WILLIAM HENRY . . . Kingston.	Appl. Sci.	In Poultry Dept., R. I. S. C.
TURNER, HARVEY ROBERT . . 137 East Manning St., Providence.	Civ. Eng.	

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WEBB, WILLIAM HARRY . . . Shelburne Falls, Mass.	Elec. Eng.	Engineer, Operating Dept., Conn. River Trans. Co.
WEBSTER, EARL CLIFTON . . 67 Daboll St., Providence.	Civ. Eng.	Teacher.

1915.

BALDWIN, GEORGE HOLLAND . . . Dexter Asylum, Hope St., Providence.	Agr.	Herdsmen.
BARNEY, RAYMOND LIVINGSTON, . 1 Reservoir Ave., Elmwood Station, Providence.	Appl. Sci.	Graduate Student, Brown Univer- sity.
BELFIT, ROBERT WILLIAM . . 58 Willow St., Waterbury, Conn.	Chem. Eng.	With Scovill Mfg. Co.
BORDEN, NORMAN HARRISON, . Y. M. C. A., Washington, D. C.	Chem. Eng.	Junior Chemist, Insecticide, and Fungicide Lab. Bureau of Chemistry.
BRECHIN, JOHN	Mech. Eng.	With Providence Engineering Works.
BROWNELL, KENNETH ALLEN . 700 Main St., Pawtucket.	Chem. Eng.	Chemist, River Spinning Co., Valley Falls.
COLEMAN, CARL LAFAYETTE . . . New London, N. H.	Agr.	Manager. Poultry Plant on Mrs. J. J. Tracy's Estate.
DODGE, WILLIAM EARL 28 Portland St., Providence.	Civ. Eng.	Civil Engineer, Providence Water Supply Board, Scituate Reser- voir Project.
GATES, CURTIS WOLCOTT . . 215 West 23d St., New York City, N. Y.	Chem. Eng.	Advertising Dep't American Maga- zine.
HALL, CARLISLE	Agr.	
HARDING, ADA LAPLACE . . . Sandwich, Mass.	Home Econ.	Instructor, High School.
HARRIS, LEON IRVING Detroit, Mich.	Elec. Eng.	With Chalmers Motor Co.
HUDSON, ROYAL CARLTON . . 34 Mumford St., Phenix.	Appl. Sci.	Graduate Student, Brown Univer- sity.
HUNTER, ALBERT CLAYTON . . 54 Fourth St., East Providence.	Appl. Sci.	Graduate Student, Brown Univer- sity.
JACKOWITZ, JOHN LOUIS . . . 269 Martin St., Providence.	Appl. Sci.	Graduate Student, Brown Univer- sity.
KEITH, LAWRENCE FULLER . . . State Agricultural College, Stillwater, Oklahoma.	Agr.	Instructor in Poultry.
KIVLIN, ALFRED PATRICK . . . 43 School St., North Attleboro, Mass.	Elec. Eng.	With Wm. Plattner, Consulting Engineer.
LENNOX, FRANK JOSEPH . . . 916 Beacon St., Boston, Mass.	Chem. Eng.	Graduate Student, Massachusetts Institute of Technology.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LEADE, JOHN EDWARD . . 160 Broad St., Providence.	Civ. Eng.	Civil Engineer, with N. Y., N. H. & H. R. R. Co.
MILLER, WESLEY CLIFTON . . 87 Peace St., Providence.	Elec. Eng.	
NICHOLS, JOSEPH ELTON . . Detroit, Mich.	Mech. Eng.	With Saxon Motor Co
NORDQUIST, HARRY O. VALDIMAR, Civ. Eng. 83 Hamlin St., Providence.		Field Office, Providence Water Supply Board.
PARKER, RALPH LANGLEY . . . Arnold Laboratory, Providence.	Agr.	Graduate Student, Brown Univer- sity.
VATSON, ADELAIDE GILBERT . (Mrs. FRANK H. BRIDEN) Port Hope, Ontario, Canada.	Home Econ.	At home.
WHITTAKER, LEROY ALLEN . . Northfield, Vt.	Elec. Eng.	Instructor, Norwich University.
WILCOX, HAROLD CLAYTON . . . Providence.	Agr.	Graduate Student, Brown Univer- sity.

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BULLETIN OF RHODE ISLAND STATE COLLEGE

VOL. XIII. NO. 1

FOR MAY, 1917

CATALOG OF THE COLLEGE



KINGSTON, R. I.

1917

PUBLISHED QUARTERLY BY THE COLLEGE

MAY, AUGUST, NOVEMBER, FEBRUARY

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PAWTUCKET LINOTYPING COMPANY, PRINTERS, PAWTUCKET

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S. C. DAMON, B. S.....	Assistant, Field Experiments
WALTER C. IRONS, B. S.....	Assistant, Field Experiments
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L. P. HOWARD, B. S.....	Assistant, Chemistry
DOROTHY W. CALDWELL, M. S....	Assistant, Animal Breeding and Pathology
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NATHANIEL HELME	Meteorologist

Department of Extension Service

ANDREW EDWARD STENE, M. S.	Director and *State Leader in Co. Agt. Work
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GLADYS LOUISE MELOCHE, B. S.....	Home Economics Instructor
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M. ALICE KIMBALL.....	Stenographer and Accountant
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Extension Service

JESSIE MAY VROOM	Clerk
CAROLINE MILLER	Stenographer
JESSIE MILDRED WOOD.....	Stenographer

* In coöperation with United States Department of Agriculture.

College Calendar.

Monday, September 17, 1917,

Examination of Entering and Conditioned Students...9 A. M.

Tuesday, September 18.....Registration.....9 A. M.

Wednesday, September 19.....Recitations Begin, 8:10 A. M.

Friday, October 12, holiday.....Columbus Day

Monday, October 15.....Short Course First Term Begins

Wednesday, November 28, 12 M. }

Monday, December 3, 8:10 A. M. }Thanksgiving Recess

Saturday, December 15, 12 M. }

Wednesday, January 2, 1918, 1 P. M. }Christmas Recess

Wednesday, January 2, 1918.....Registration for Special Poultry Course

Saturday, January 19.....Short Course First Term Ends

Monday, January 21.....Short Course Second Term Begins

Friday, February 8, 4:35 P. M.....First Term Ends

Monday, February 11.....Second Term Begins

Registration, 9 A. M.

Tuesday, February 12.....Recitations Begin, 8:10 A. M.

Monday to Thursday, February 18, 19, 20, 21.....Farmers' Week

Friday, February 22, holiday.....Washington's Birthday

Wednesday, March 27, 4:35 P. M. }

Tuesday, April 2, 8:10 A. M. }Easter Recess

Saturday, April 13.....Short Course Second Term Ends

Friday, May 10, holiday.....Arbor Day

Saturday, May 11.....Interscholastic Track Meet

Thursday, May 30, holiday.....Memorial Day

Sunday, June 16.....Baccalaureate Address

Thursday, June 20.....Commencement Exercises

RHODE ISLAND STATE COLLEGE

Foundation

The college is one of the so-called land-grant colleges. Of the purpose of these institutions Senator Morrill, the author of the national legislation which brought them into existence in all the states, says:

"The fundamental idea was to offer an opportunity in every state for a liberal and larger education to large numbers, not merely those destined to sedentary professions, but to those needing higher instruction for the world's business, for the industrial pursuits and professions of life." Again he says: "It was to give a chance to the industrial classes of the country to obtain a liberal education, something more than what was bestowed by our universities and colleges in general, which seemed to be based more on the English plan of giving education only to what might be called the professional classes, in law, medicine, and theology."

The college has also a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows:

(1) The interest on \$50,000, which was the net amount received by the State from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.

(2) The annual appropriation of \$15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.

(3) The annual appropriation of \$25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as

follows: "To be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the State under the Adams Act of 1906, yielding each year \$15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting yearly to \$25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The funds coming from the general government to the State under the Smith-Lever Act of 1914, amounting yearly to \$10,000. This fund is exclusively for extension work in agriculture and home economics.

(7) The annual maintenance fund from the State, of \$40,000, used for all the purposes for which the funds of the general government cannot be used: *e. g.*, for executive and administrative work; for heating, lighting, and maintenance of buildings; for the teaching of modern languages other than English; for the teaching of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroly revised during the years 1906-07 and 1907-08. The course in home economics for young women was introduced in 1908.

Object and Organization

The function of the Rhode Island State College is to aid in fostering the industrial life of the State, at least in so far as pertains to agriculture, manufactures, transportation, and home making. This it does in three ways: 1. by the investigation and discovery of new truths more or less directly applicable in the industries; 2. by the direct distribution of industrial information to the people; 3. by the organization and administration of definite courses of instruction

designed to fit young men and young women for effective work in the industrial pursuits.

The first of these duties is performed by the

Experiment Station

for a description of the work of which the reader is referred to the report of the director, included in the report of the Board of Managers for the current year. A statement of its staff organization may be found on page 7 of this catalog.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all who desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, a

College Extension Department

has been organized, and is in active operation.

The purpose of this department is to carry the instruction of the college to those who cannot come to it for study. Whenever necessary and possible, visits will be made to any part of the State to examine farms, orchards, and gardens; to identify injurious insects or plant diseases, or give instruction in regard to methods of treatment; or to examine soils with a view to suggesting remedies for lack of fertility. General plans for laying out farms and for carrying out the details of any farm operation will be given the fullest consideration. The college is available for consultation at any time in regard to any problem of the farm, garden, or orchard. The fullest correspondence is invited, and conscientious consideration will be given to every letter received. In conjunction with the phase of the work, popular bulletins are issued from time to time, which endeavor to present the gist of agricultural information on various topics without the uninteresting detail which the usual experiment station bulletins must often include.

Whenever possible, arrangements will be made for demonstrations or lectures by members of the college faculty and experiment station staff, when called for by any agricultural meeting or neighborhood gathering. A number of lectures of various subjects has been prepared, which can be secured on short notice by any gathering or organization within the State. These lectures are free, the only

charge being the traveling expenses of the speaker. A complete list of the lectures, together with such other information in regard to them as may be of interest, has been prepared and may be obtained by sending a postal-card request to the department.

Eventually an important part of the extension work will be the encouragement of home study thru correspondence courses and study clubs supervised by the college. For the present, time and funds will not permit an adequate development of this project except in one or two lines, but advice will be given to any person wishing to take up home study, regarding courses of reading, books, and other literature which may be necessary in connection with such work.

In coöperation with the United States Department of Agriculture, the extension service of the college is now able to offer a system of club work originated by the Federal Department, thru which boys and girls can take up definite agricultural projects in their homes and carry them to a successful conclusion. These projects include poultry keeping, orcharding, home or school gardening, corn growing, potato growing, dairy herd records, canning of fruit and vegetables, baking, sewing, etc.

In coöperation with the Federal Department also, an extension instructor in farm management and in agricultural organization has been engaged, whose work is to aid farmers in planning their farms and in forming coöperative organizations. During the year two county agents have begun their work, one in the southern Rhode Island district, and one in the Providence district.

Another extension instructor has been engaged to conduct demonstrations in agronomy in different sections of the State, the purpose of which is to show the best methods of growing crops now common in the State or to make the farmers familiar with new kinds or varieties which may be of value in Rhode Island.

Home economics is receiving attention thru an extension instructor who devotes her attention to study clubs, lectures, correspondence, and demonstrations which have for their purpose giving information to the housewives of the State.

Further notes in regard to this work are given in leaflets and circulars issued by the extension department, and correspondence from any one who may be interested therein is invited. This information can be secured by sending an inquiry to the department.

Engineering Extension Work

In the engineering department, as well as in the other branches of the college, the endeavor is to be of the greatest possible service to the people of the State, not only in the matter of providing formal instruction to students coming to the college, but also in giving help and information to those outside the college enrollment who are desirous of extending their technical knowledge, and to whom, for one reason or another, a regular college course is impossible.

To this end there has been offered in the past a short course of two years' duration, in which instruction has been given in the elements of engineering. Experience, however, has shown that those most eager to avail themselves of this kind of instruction, and those who would be most helped by it, are unable to leave their regular duties to attend classes at the college.

As a consequence, the short course work in engineering at the college has been discontinued, and in its place has been inaugurated the plan of extension work in engineering. Instead of taking the man away from his regular duties to bring him to the work, the present plan is to carry the work to the man.

This extension work is carried out in two chief ways,—by means of separate lectures on specific topics, and by means of progressive study in organized classes. The subjects presented are all of a technical character and are adapted to the particular needs and capabilities of the classes.

The present requirements for such class work are that a suitable place for meeting be provided, and that the attendance be regular. This regularity of attendance is a matter of the greatest importance, since without it little or no progress is possible.

Classes have been conducted in various places in The Use of the Slide Rule, Mechanism and Shop Calculations, Power Plant Computations, etc. Instruction in these and any other desired branch of engineering may be had by citizens of the State by complying with the requirements mentioned, the number of such courses being limited only by the available time of the members of the department. Also lecturers will be provided to present various phases of engineering before technical organizations and engineering societies.

The College as an Educational Agency

In its third form of activity, the purpose and work of the Rhode Island State College is to give college training and culture to young men and young women, not in spite of, but thru and with, vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroly efficient worker.

I. THE FOUR-YEAR COURSES

To this end certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in mathematics, pure and applied; the English language as a means of intercommunication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses, moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-winning, but also preparation for citizenship, for moral and social life, have intertwined with the vocational work and study, previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology, and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools. They thus become an integral part of the school system of the State. Young men and young women, citizens of the State and having requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are the agricultural course, the engineering course, the vocational course in applied science, and the course in home economics.

The Agricultural Course

The agricultural course is intended to give thoro preparation for taking charge of and operating a piece of landed property. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thoro study of the sciences bearing directly on such work, viz: botany, chemistry, geology, zoölogy, anatomy, physics, bacteriology, and entomology. In addition, it embraces the culture and mental discipline arising from the study of mathematics, English composition and rhetoric, history, drawing, modern languages, economics, and English literature. The course is planned to give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first and second years; in the second half of the junior year, in addition to the required work for all students in the course, two optional lines of work are offered, one of which must be selected by the student and followed until graduation. The two lines offered are horticulture and animal husbandry. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. Beginning with the class of 1919, all candidates for a degree in the agricultural course shall be required to have spent at least six months in practical farm work before the degree shall be granted. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition	3	English I—Rhetoric and Composition	3
Math. III—Algebra	2½	Chemistry II—General Chem. and Qualitative Analysis	3[1½]
Math. II—Trigonometry	2½	Botany I—General	1[2]
Chemistry I—General	2[1½]	An. Husb. I—Stock Judging	[2]
Botany I—General	1[2]	An. Husb. III—Breeds	2
Hort. I—Propagation of Plants	1[1]	Hort. II—Vegetable Gardening	2
Freehand Drawing II—Pencil	[1]	Hort. IV—Spraying and Pruning	1[1]
Psy. and Edu. VIII—How to Study	½	Mil. Sci. and Tactics I—Drill	[1]
Mil. Sci. and Tactics II—Drill	[1]	Mil. Sci. and Tactics II—Theory	1
Mil. Sci. and Tactics II—Theory	1		

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation	2
English VIII—Interpretive Reading.....	1	Chemistry XIV—Agricultural Chem-	
Chemistry IV—Organic Chemistry..	3[1]	istry.....	3[1]
Botany II—Botany of Crops and		Physics I—Descriptive Physics.....	5
Weeds.....	1[2]	Zoology X—Vertebrate Zoölogy	2[2]
Botany III—Trees and Shrubs.....	[1]	Geology I	2
Zoology X—Vertebrate Zoölogy....	2[2]	Mil. Sci. and Tactics I—Drill.....	[1]
Civil EngineeringI—Surveying.....	1[2]	Mil. Sci. and Tactics IV—Theory..	1
Mil. Sci. and Tactics I—Drill.....	[1]	Botany III—Trees and Shrubs.....	[1]
Mil. Sci. and Tactics IV—Theory....	1		
Agronomy II—Forage Plants.....	2		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IX—Debating	1	Agronomy IV—Farm Crops.....	3[1]
An. Husb. X—Vet. Practice.....	3	Agronomy VII—Farm Management.	2
An. Husb. XII a—Poultry Culture.....	1	History I—Industrial History.....	
Agron. III—Soils and Fertilizers...4[1½]		or	3
Hort. III—Fruit Culture	2	Mil. Sci. and Tactics V—Theory.....	
Hort. XVI—Landscape Gardening... 1[2]		Mil. Sci. and Tactics I—Drill....	
English IV—Modern Essays.....		or	1
or	3	Physical Training	
Mil. Sci. and Tactics V—Theory.....		Options: A. or B.	
Mil. Sci. and Tactics I—Drill....	[1]	All of the subjects in one of the	
or		following groups must be chosen.	
Physical Training		A. Horticulture.	
		Botany IV—Forestry	[2]
		or	
		Hort. XVII—Small Fruits	2[1]
		Zoölogy IV—Economic Entomology. 3[1]	
		Elective.	3 or 4
		B. Animal Husbandry.	
		An. Husb. VII—Dairy Practice....	1[2]
		Agronomy VI—Farm Machinery....	2[1]
		Elective.	4

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	English V—Shakspeare	3
English X—Oratorical Writing and		Agronomy X—Agricultural Experi-	
Extemporaneous Speaking	1	mentation.....	3
An. Husb. VI—Feeds and Feeding.....	3	Bacteriology Ib—General.....	1[2]
Agronomy XI—Plant Breeding.....	3	Mil. Sci. and Tactics VI—Theory.....	
Bacteriology Ia—General	1[2]	or	3
Mil. Sci. and Tactics VI—Theory.....		Elective.	
or	3	Mil. Sci. and Tactics I—Drill....	
Elective.	3	or	1
Elective.	3	Physical Training	
Mil. Sci. and Tactics I—Drill....	1	Options A. or B.:	
or		All of the subjects in one of the	
Physical Training		following groups must be chosen.	
		A. Horticulture.	
		Botany IV—Forestry	2
		or	
		Hort. XVII—Small Fruits.....	2[1]
		Elective.	3 or 4
		B. Animal Husbandry.	
		An. Husb. IV—Breeding.....	3
		Elective.	3

The Engineering Course

The engineering course has the same duration and the same general plan as that usually offered in the standard technical colleges. Students will follow the course as laid down until the sophomore year, at which time they must elect one of the four optional lines offered, viz.: mechanical, electrical, civil, and chemical engineering. Any line of work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and efficient work in the great manufacturing and commercial industries of the state; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. The tabulated course follows:

Freshman Year

For the first year the course is the same for all students of engineering.

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition	3	English I—Rhetoric and Composition	3
Math. I—Algebra	2½	Math. VIIIA—Analytics	5
Math. II—Trigonometry	2½	Chemistry II—General Chemistry and Qualitative Analysis	3[1½]
Chemistry I—General	2[1½]	Mech. Eng. V—Descriptive Geometry	1[2]
Mech. Eng. I—Mechanical Drawing	[4]	Mech. Eng. III—Pattern Making	[2]
Mech. Eng. II—Forge and Foundry	[2]	Mil. Sci. and Tactics—Drill	[1]
Psy. and Ed. VIII—How to Study	½	Mil. Sci. and Tactics II—Theory	1
Mil. Sci. and Tactics I—Drill	[1]		
Mil. Sci. and Tactics II—Theory	1		

MECHANICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work	1	English III—Argumentation	2
English VIII—Interpretive Reading	1	Physics II—General	4
Physics II—General	4	Physics III—Laboratory	[1½]
Physics III—Laboratory	[1½]	Math. XI—Calculus	5
Math. X—Calculus	5	Mech. Eng. VIA—Mechanical Drawing	[2]
Mech. Eng. VI—Mechanical Drawing	[2]	Mech. Eng. XII—Mechanism	3
Civil Eng. I—Surveying	1[2]	Mil. Sci. and Tactics I—Drill	[1]
Mil. Sci. and Tactics I—Drill	[1]	Mil. Sci. and Tactics IV—Theory	1
Mil. Sci. and Tactics IV—Theory	1		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V—Theory..	1	Mil. Sci. and Tactics V—Theory..	3
English IX—Debating		Mech. Eng. IXa—Heat Engineering..	
Mech. Eng. VIII—Machine Drafting	[3]	Mech. Eng. Xa—Applied Mechanics..	1 3/4
Mech. Eng. IX—Heat Engineering..	3	Mech. Eng. XI—Hydraulics	3 3/4
Mech. Eng. X—Applied Mechanics..	5	Mech. Eng. XIII—Valve Gears....	3
Mech. Eng. XIV—Machine Shop....	[3]	Mech. Eng. XIV—Machine Shop....	[3]
Mech. Eng. XV—Experimental En-	1[1]	Mech. Eng. XVI—Experimental En-	1[1]
gineering.....		gineering b.....	
Mil. Sci. and Tactics I—Drill....	[1]	Mil. Sci. and Tactics I—Drill....	[1]
or		or	
Physical Training		Physical Training	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	Mech. Eng. XVIII—Experimental Engineering d.....	[2]
English X—Oratorical Writing and Extemporaneous Speaking	1	Mech. Eng. XIX—Heating and Ventilation.....	1
Mech. Eng. XVII—Experimental Engineering c.....	2[1 1/2]	Mech. Eng. XX—Machine Design..	[3]
Mech. Eng. XX—Machine Design....	[3]	Mech. Eng. XXII—Assigned Work	3
Mech. Eng. XXI—Power Plants and Design.....	2[1]	or	
Mech. Eng. XXII—Assigned Work	3	Mil. Sci. and Tactics VI—Theory	2
or		Mech. Eng. XXIII—Dynamics of Machines.....	
Mil. Sci. and Tactics VI—Theory	3	Mech. Eng. XXVI—Business Organization and Management	3
Elec. Eng. I—Theory of Direct Currents.....		Elec. Eng. IV—Theory of Alternating Currents	2
Mil. Sci. and Tactics I—Drill....	[1]	Elec. Eng. II—Direct Current Laboratory.....	[3]
or		Mil. Sci. and Tactics I—Drill....	[1]
Physical Training		or	
		Physical Training	

ELECTRICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation	2
English VIII—Interpretive Reading.	1	Physics II—General	4
Physics II—General	4	Physics III—Laboratory	[1 1/2]
Physics III—Laboratory	[1 1/2]	Math. XI—Calculus	5
Math. X—Calculus	5	Mech. Eng. VIa—Mech. Drawing....	[2]
Mech. Eng. VI—Mechanical Drawing.....	[2]	Mech. Eng. VII—Machine Shop....	[3]
Civ. Eng. I—Surveying.....	1[2]	Elec. Eng. IIIa—Prin. of Elec. Eng.	1/2
Mil. Sci. and Tactics I—Drill....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics IV—Theory....	1	Mil. Sci. and Tactics IV—Theory..	1

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V—Theory..	1	Mil. Sci. and Tactics V—Theory..	[3]
English IX—Debating		Elec. Eng. II—Direct Current Lab.	
Elec. Eng. I—Theory of Direct Currents.....	3	Elec. Eng. IV—Theory of Alternating Currents	2
Elec. Eng. IIIb—Prin. of Elec. Eng.	1	Mech. Eng. IX—Heat Engineering..	3
Physics V—Electrical Meas.....	[1 1/2]	Mech. Eng. X—App. Mechanics....	1 3/4
Physics VI—Prin. of Illumination..	1[1 1/2]	Mech. Eng. XI—Hydraulics	2 3/4
Mech. Eng. IX—Heat Engineering..	3	Mech. Eng. XVIIb—Exp. Engineering	[2]
Mech. Eng. X—App. Mechanics....	5	Mil. Sci. and Tactics I—Drill....	[1]
Mil. Sci. and Tactics I—Drill....	[1]	or	
or		Physical Training	
Physical Training			

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	Elec. Eng. V—Theory of Alternat- ing Currents	3
English X—Oratorical Writing and Extemporaneous Speaking	1	Elec. Eng. VI—Alt. Current Lab....	[3]
Elec. Eng. V—Theory of Alternat- ing Currents	3	Elect. Eng. VII—Design of Electrical Machinery	[3]
Elec. Eng. VI—Alt. Current Lab- oratory	[3]	Elec. Eng. VIII—Telephone Engin- eering	1
Elec. Eng. XII—Assigned Work... }	[3]	Elec. Eng. X—Electric Power Trans- mission	4
Mil. Sci. and Tactics VI—Theory }		Elec. Eng. XI—Electric Railways...	2
Mech. Eng. XVII—Experimental Engineering c	2[1½]	Elec. Eng. XII—Assigned Work... }	[3]
Mech. Eng. XXI—Power Plants...	2	Mil. Sci. and Tactics VI—Theory }	
Mil. Sci. and Tactics I—Drill.... }	[1]	Mil. Sci. and Tactics I—Drill.... }	[1]
Physical Training		Physical Training	

CIVIL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work	1	English III—Argumentation	2
English VIII—Interpretive Reading.	1	Physics II—General	4
Physics II—General	4	Physics III—Laboratory	[1½]
Physics III—Laboratory	[1½]	Math. XI—Calculus completed....	5
Math. X—Calculus	5	Mech. Eng. VIIa—Mech. Drawing...	[2]
Civil Eng. I—Surveying	1[2]	Mech. Eng. VII—Machine Shop....	[1½]
Mech. Eng. VI—Mechanical Drawing	[2]	Civil Eng. II—Topographic Survey- ing	1[2]
Mil. Sci. and Tactics I—Drill....	[1]	Mil. Sci. and Tactics I—Drill....	[1]
Mil. Sci. and Tactics IV—Theory...	1	Mil. Sci. and Tactics IV—Theory..	1

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.... }		History I—Industrial History.... }	3
Mil. Sci. and Tactics V—Theory... }	3	Mil. Sci. and Tactics V—Theory.. }	
English IX—Debating	1	Civil Eng. IIb—Railroad Engineer- ing	3
Civil Eng. IIIa—Railroad Engineer- ing	5	Civil Eng. V—Roads and Pavements	3[1]
Civil Eng. IV—Graphic Statics	2	Mech. Eng. X—Applied Mechanics.	1½
Mech. Eng. X—Applied Mechanics...	5	Mech. Eng. XI—Hydraulics	3½
Mech. Eng. IX—Heat Engineering...	3	Mech. Eng. XVI—Experimental En- gineering b	[2]
Mil. Sci. and Tactics I—Drill.... }	[1]	Geology I	2
Physical Training		Mil. Sci. and Tactics I—Drill.... }	[1]
		Physical Training	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	Civil Eng. VIII—Bridge Design...	[3]
English X—Oratorical Writing and Extemporaneous Speaking	1	Civil Eng. IX—Masonry	2[1]
Mech. Eng. XVII—Experimental Engineering c	2[1½]	Civil Eng. X—Reinforced Concrete.	2
Civil Eng. VI—Bridge Details	[2]	Civil Eng. XII—Water Supply....	3
Civil Eng. VII—Bridge Analysis...	2	Civil Eng. XIV—Contracts and Spec- ifications	2
Civil Eng. XI—Sewerage	2	El. Eng. IV—Theory of Alternating Currents	2
El. Eng. I—Theory of Direct Cur- rents	3	Civil Eng. XV—Assigned Work... }	3
Civil Eng. XV—Assigned Work... }	3	Mil. Sci. and Tactics VI	
Mil. Sci. and Tactics VI		Mil. Sci. and Tactics I—Drill.... }	[1]
Mil. Sci. and Tactics I—Drill.... }	[1]	Physical Training	
Physical Training			

CHEMICAL ENGINEERING**Sophomore Year**

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation	2
English VIII—Interpretive Reading.	1	German—Scientific.	5
Physics II—General	4	Physics II—General	4
Physics III—Laboratory	[1½]	Physics III—Laboratory	[1½]
Math. X—Calculus	5	Math. XI—Calculus	5
Chemistry III—Qualitative Analysis	[3]	Mil. Sci. and Tactics I—Drill.....	[1]
Mech. Eng. VI—Mechanical Drawing.....	[2]	Mil. Sci. and Tactics IV—Theory..	1
Mil. Sci. and Tactics I—Drill.....	[1]		
Mil. Sci. and Tactics IV—Theory..	1		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History....	3
or Mil. Sci. and Tactics V—Theory.		Mil. Sci. and Tactics V—Theory.	
English IX—Debating	1	Mech. Eng. X—Applied Mechanics.	1½
Mech. Eng. X—Applied Mechanics.	5	Mech. Eng. XI—Hydraulics.....	3½
Chemistry VII—Quantitative Analysis.....	[3]	Chemistry VIII—Quantitative Analysis.....	[5]
Chemistry XVI—Industrial Chemistry.....	4	Chemistry XII—Physical Chemistry.....	4
Chemistry IVa—Organic Chemistry	3[1½]	or Chemistry V—Organic Chemistry.	
Mil. Sci. and Tactics I—Drill....	[1]	Chemistry VI—Organic Chemistry..	[3]
or Physical Training		Mil. Sci. and Tactics I—Drill....	[1]
		or Physical Training	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	Chem. XII—Physical Chemistry..	4
English X—Oratorical Writing and Extemporaneous Speaking	1	or Chem. V—Organic Chemistry.....	
Elec. Eng. I—Theory of Direct Currents.....	3	Chem. XX—Assigned Work	3
Mech. Eng. IX—Heat Engineering..	3	or Mil. Sci. and Tactics VI—Theory	
Chem. XVII—Industrial Chemistry.	2[2]	Chem. XXI—Reports and Discussions.....	2
Chem. XX—Assigned Work	3	Mech. Eng. IX—Heat Engineering.	1½
or Mil. Sci. and Tactics VI—Theory		Mech. Eng. XXVI—Indus. Organization and Management	3
Chem. XXI—Reports and Discussions.....	2	Mech. Eng. XII—Mechanism	3
Mil. Sci. and Tactics I—Drill....	[1]	Chem. XXII—Organic and Physical Chemical Laboratory	[2]
or Physical Training		Mil. Sci. and Tactics I—Drill....	[1]
		or Physical Training	

Vocational Course in Applied Science

This course offers to the student opportunity to prepare either for teaching or for any one of several other distinct vocational pursuits, such as the application of botany, zoölogy, chemistry, and bacteriology to practical industrial problems. In these subjects, as well as in agriculture, the Vocational Science Course makes specialization possible. In addition, the course is so constructed that the

student, although specializing, may come in touch with subjects that possess wider cultural significance and insure that broader outlook upon life which should characterize the educated man.

The general plan of the course is to give primarily, a foundation in the sciences of chemistry, physics, and biology; also to give the student an acquaintance with history and literature and an efficient command of good English. The course offers, at the beginning of the Junior year, options in Agriculture, Biology, and Chemistry. One of these the student must select in addition to certain studies required of all. Opportunity either for further specialization within the option, or for gaining a broader training in unrelated studies is afforded thru a limited number of elective subjects.

The nature and aim of these several options are as follows:

THE AGRICULTURAL OPTION

This option combines the broad scientific training of the Vocational Science Course with the fundamental subjects given in the Agricultural Course. It thus affords a basis for investigational work in subjects related to agriculture.

With the introduction of agriculture into the secondary and grade schools, there was created a demand for teachers and superintendents who had received, in addition to work in the sciences and education, training in the broad field of agriculture. This option therefore furnishes preparation in those fundamental subjects in Agronomy, Animal Husbandry, and Horticulture which will enable the graduates from this course acceptably to fill positions as instructors and principals of agricultural high schools or as superintendents of schools in rural communities.

THE BIOLOGICAL OPTION

The Biological Option offers training in the applications of biological science to the problems of modern life. The great growth of agricultural investigation in recent years has created a demand for trained workers in applied biology. In the state experiment stations and the federal government bureaus, opportunities are offered for the investigation of problems in plant physiology and pathology, economic entomology, animal nutrition and animal pathology. State and federal inspection of plants and animals, and the problems of the control of plant and animal diseases, offer other

fields of work. The growing importance of fish and oyster culture call for workers trained in biological subjects. The scope of public hygiene and sanitation is increasing each year and has created a growing demand for trained workers in federal, state, and municipal health service. In addition, such students are well equipped to undertake graduate work in other institutions, or to begin the study of medicine.

THE CHEMICAL OPTION

The subjects in Chemistry are designed to train the student in theoretical and descriptive inorganic and organic chemistry; to give him a working knowledge of the various branches of chemical analysis; and to familiarize him with the practical applications of chemistry. The course is well adapted to prepare students for teaching, for experiment station work, for graduate work in chemistry, or for positions in industries which involve chemical processes. Such industries include the bleaching and dyeing of cotton, silk and wool, the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, paper, soap, paint and varnish, the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion or by destructive distillation to form gas, coke and tar, embracing the entire field of forest products industries. In addition the course is intended to prepare particularly for the more specialized chemical industries such as the manufacture of chemicals and the manufacture and application of dyestuffs.

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition	3	English I—Rhetoric and Composition	3
German.	3	German.	3
Math. I—Algebra	2½	Math. VIIlb	4
Math. II—Trigonometry	2½	Chemistry II—General Chemistry and Qualitative Analysis	3[1½]
Chemistry I—General	2[1½]	Botany I—General	1[2]
Botany I—General	1[2]	Freehand Drawing II—Pencil	[1]
Freehand Drawing II—Pencil	[1]	Psy. and Ed. VIII—How to Study.	½
Psy. and Ed. VIII—How to Study.	½	Mil. Sci. and Tactics II—Theory	1
Mil. Sci. and Tactics II—Theory	1	Mil. Sci. and Tactics I—Drill	[1]
Mil. Sci. and Tactics I—Drill	[1]	or	
Physical Training		Home Economics IIIb—Euthenics	[1]
		Mil. Sci. and Tactics I—Drill	
		or	
		Physical Training	[1]

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation	2
English VIII—Interpretive Reading	1	German—Scientific.	5
Chemistry IV—Organic	3[1]	Geology I	2
or		Zoölogy X—Vertebrate Zoölogy....	2[2]
Chemistry III—Qualitative Analysis	[3]	Physics II—General	4
Botany II—Botany of Crops and		Physics III—Laboratory.....	1[½]
Weeds.	1[2]	Mil. Sci. and Tactics IV—Theory..	1
Zoölogy X—Vertebrate Zoölogy....	2[2]	Mil. Sci. and Tactics I—Drill....	[1]
Physics II—General	4	or	
Physics III—Laboratory	1[½]	Physical Training	
Mil. Sci. and Tactics IV—Theory..	1		
Mil. Sci. and Tactics I—Drill....	[1]		
or			
Physical Training			

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V—Theory	1	Mil. Sci. and Tactics V—Theory..	3
English IX—Debating		Psy. and Ed. I—History of Educa-	
Psy. and Ed. IV—General Psycho-		tion.	
logy.	3	or	
or		Psy. and Ed. III—Secondary Edu-	
Psy. and Ed. II—Principles of Ed-		cation.	
ucation.		Mil. Sci. and Tactics I—Drill	[1]
Mil. Sci. and Tactics I—Drill....	[1]	or	
or		Physical Training	
Physical Training		Options: A, B or C. All the sub-	
Options: A, B or C. All of the sub-		jects in one of the following groups	
must be chosen.		must be chosen.	
A. Agriculture.		A. Agriculture.	
Agronomy III—Soils	4[1½]	Agronomy IV—Farm Crops	3[1]
Horticulture I—Propagation of Plants	1[1]	Zoölogy IV—Economic Entomology.	3[1]
Elective	3	Botany IV—Forestry	1[1]
or		or	
Zoölogy VIII—Histology and Embry-		Horticulture IV—Spraying and	
ology.	2[3]	Pruning.	
Botany V—Plant Histology	1[4]	Elective.	3
Elective.	3	B. Biology.	
C. Chemistry.		Botany VI—Plant Pathology.....	1[4]
Chemistry VII—Quantitative Analy-		Zoölogy I—Invertebrate Zoölogy..	1[3]
sis.	[3]	or	
Chemistry IVa—Organic	3[1½]	Chemistry XIX—Physiological Chem-	
Chemistry XVI—Industrial Chemistry	4	istry.	4
		Elective.	3
		C. Chemistry.	
		Chemistry VIII—Quantitative An-	
		alysis.	[5]
		Chemistry VI—Organic Laboratory.	1[3]
		Chemistry XII—Physical Chem-	
		istry.	
		or	
		Chemistry V—Advanced Organic.	4

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics.....	3	English V—Shakspeare	3
English X—Oratorical Writing and Extemporaneous Speaking.....	1	Psy. and Ed. I—History of Ed- ucation. or	3
Psy. and Ed. IV—General Psycho- logy. or	3	Psy. and Ed. III—Secondary Ed- ucation. or	3
Psy. and Ed. II—Principles of Ed- ucation. or	3	Mil. Sci. and Tactics VI—Theory or	3
Mil. Sci. and Tactics VI—Theory or	3	Elective. or	[11]
Elective. or	[11]	Mil. Sci. and Tactics I—Theory.. or	
Mil. Sci. and Tactics I—Drill... or		Physical Training	
Physical Training		Options: A, B or C. All of the sub- jects in one of the following groups must be chosen.	
Options: A, B or C. All of the sub- jects in one of the following groups must be chosen.		A. Agriculture.	
A. Agriculture.		Horticulture II—Vegetable Garden- ing.	2
An. Hus. XIV—Poultry.....	[2]	Animal Husbandry IV—Breeding...	3
Horticulture X—Pomology.....	3	Animal Husbandry VI—Feeding...	3
Horticulture XVI—Landscape Gar- dening.	1[2]	B. Biology.	
B. Biology.		Chemistry XIX—Physiological Chem- istry. or	4
Agronomy XI—Plant Breeding....	3	Zoölogy I—Invertebrate Zoölogy....	1[3]
Assigned Biological Work.....	3	Assigned Biological Work.....	3
C. Chemistry.		Zoölogy II—General	1[1½]
Chemistry XVII—Industrial Chem- istry. or	4	C. Chemistry.	
Chemistry XXI—Reports and Dis- cussions. or	2	Chemistry V—Advanced Organic..	4
Assigned Work	3	Chemistry XII—Physical	
		Chemistry XXI—Reports and Dis- cussions. or	2
		Chemistry XXII—Organic and Phys- ical Chemical Laboratory	2

The Course in Home Economics

The object of the home economics course is to fit young women for home making and to provide adequate training for teachers of the various household arts. Nowhere is the application of modern science to everyday life more important than in the home. In no other life-work do women find greater need of scientific knowledge and technical skill than in the intelligent and economic administration of household affairs.

The course includes instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene; and instruction in the care of infants and young children. During one year instruction is given in hand sewing, machine practice, and in drafting, cutting, and making of plain garments. Altho the main work is scientific and technical, the importance of artistic and literary training for home life has not been neglected. It is recognized that all the knowledge of right living is needed to assist the student to a broader conception of citizenship as well as in performing the manifold duties of daily life.

Attention has also been given, in planning the course, to the need of students desiring to enter special fields of domestic activity along institutional and educational lines of work.

The entrance requirements are the same as for the other college courses. Forty-one of the credits required for graduation are in the home economics department. Students are expected to take the course as outlined below, with choice of electives; but when entered in other courses in the college they may elect certain work in the home economics department, under direction of the head of the department. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition	3	English I—Rhetoric and Composition	3
Math. III—Algebra	2½	Chemistry II—General Chemistry and Qualitative Analysis	3[1½]
Math. II—Trigonometry	2½	Botany I—General	1[2]
Chemistry I—General Chemistry	2[1½]	Freehand Drawing II—Pencil	[1]
Botany I—General	1[2]	Freehand Drawing IV—Color Problems	[1]
Freehand Drawing II—Pencil	[1]	Home Economics I—Clothing and Textiles	2[3]
Psy. and Ed. VIII—How to Study	½	Home Economics III—Hygiene	1
Home Economics I—Clothing and Textiles	[3]	Physical Training	[1]
Physical Training	[1]		

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work	1	English III—Argumentation	2
English VIII—Interpretive Reading	1	German or French	3
German or French	3	Zoölogy X—Vertebrate	2[2]
Chemistry IV—Organic	3[1]	Physics I—Descriptive	5
Zoölogy X—Vertebrate	2[2]	Home Economics IV—Foods	2[3]
Home Economics IV—Foods	3[3]	Physical Training	[1]
Physical Training	[1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays	3	History I—Industrial History	3
English IX—Debating	1	Chemistry X—Food Analysis	4
Psy. and Ed. IV—General Psychology	3	Chemistry XIX—Physiological Chemistry	
Zoölogy VII—Histology and Embryology	2[3]	Freehand Drawing III—History of Art	2
Home Economics VI—Human Nutrition	3	Freehand Drawing VIII—Drawing	[1]
Home Economics IX—Sanitation	2	Home Economics VII—Home Decoration	2
Physical Training	[1]	Home Economics VIII—Dietetics	2[1]
Elective	2	Physical Training	[1]
		Elective	4

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	English V—Shakspeare	3
English X—Oratorical Writing and Extemporaneous Speaking	1	Home Economics XII—Home Nursing	1
Freehand Drawing III—History of Art	2	Home Economics XIV—Assigned Work	3[2]
Home Economics XI—Hygiene and Care of Children	2	Bacteriology Ib—General	1[2]
Home Economics XXI—Home Administration	1[2]	Chemistry X—Food Analysis	[4]
Bacteriology Ia—General	1[2]	Chemistry XIX—Physiological Chem.	
Physical Training	[1]	Physical Training	[1]
Elective	5	Elective	3

II. SHORT OR SPECIAL COURSES IN DOMESTIC SCIENCE

Where the age and attainments of applicants seem to warrant it, special courses in domestic science for those unable for any cause to take the regular four-years' course will be arranged, so far as the resources of the college will permit. Applicants desiring such special courses should apply before August 15, so as to allow ample time for full correspondence and investigation before a final decision in the individual case is taken on the part of the college.

III. SHORT COURSE IN AGRICULTURE

To meet the needs of those who find it out of their power to undertake a four-years' college course, but who, nevertheless, desire to increase their efficiency on the farm, the college offers what is known as a short course in agriculture. Students may with advantage take only a part of the course if unable to remain for the whole time.

It is required of applicants for this course that they be at least eighteen years of age at entrance, that they shall have completed at least the common school, that they shall have a definite purpose in mind in applying for the course, and *that within three weeks after entrance they shall satisfy their teachers that they are sufficiently mature, sufficiently earnest, and sufficiently capable to warrant their remaining for the course.* Every effort will be made to guard this course from becoming a refuge for the idle, the purposeless, and therefore the unsuccessful, and to that end drastic measures of elimination will be used whenever necessary, but especially at the end of the first three weeks of the year.

The course is in no case supposed to serve as a substitute for the regular work of the college either in character or in scope of the subject-matter presented, and does not lead, directly or indirectly, to a degree, a certificate only being granted. Neither is it to be considered as preparatory to the college work. Its particular function is to give, in the shortest, most direct, way possible, certain definite, specific, and perhaps uncorrelated information which will be of immediate value on the farm.

The short course in agriculture will be given in two school years of twenty-four weeks, beginning the middle of October and ending

the middle of April. The object of this change in dates from that of the regular college course is to permit those who find it impossible to be away from the farm during the busy season of the year to obtain the advantages of this special training during the slack season.

In order that seriousness of purpose as regards an agricultural occupation may be assured from those taking the agricultural short course, no student will be permitted to register for the second year's work who has not had at least six months' practical experience on a farm. This experience should be obtained upon a farm making a specialty of the line of work which the student intends to follow.

The special work in agriculture treats in an elementary way of such subjects as plant life, soils and fertilizers, vegetable gardening, stock judging, crops, dairy practice, poultry, fruit culture, etc.

Short-course work is of comparatively recent introduction at this institution, and consequently is still in the process of development. The tabulated course follows:

First Year

Work commences October 15, 1917. First year subjects run continuously for the year

Botany A—Plant Life	1[2½]
Agronomy A—Soils and Fertilizers	5[1]
An. Husb. B—Stock Judging.....	[2]
An. Husb. A—Breeds.....	2
An. Husb. H—Poultry	1[2]
Zoölogy A—Economic Entomology.....	3

Second Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Agron. B—Crops and Rotation.....	5[2]	Hort. A—Vegetable Gardening.....	3[1½]
An. Husb. C—Dairy Practice.....	1[3]	Agron. C—Farm Management.....	3[1]
An. Husb. D—Principles of Feeding	3	An. Husb. E—Principles of Breeding	2[1]
Hort. B—Fruit Culture.....	3[1]	Agron. D—Farm Machinery.....	1[3]
An. Husb. G—Care of Animals.....	2	Hort. E—Spraying and Pruning.....	2[1½]
Hort. G—Propagation of Plants.....	[1]	Hort. F—Home Grounds.....	3
Breeds of Poultry	[1]		

The following students received certificates, in 1916, upon the completion of the two years' course in agriculture: John Henry Fernandez, George Alden Winter.

IV. SPECIAL POULTRY COURSE

Rhode Island State College in the winter of 1898 gave the first poultry course offered in the United States. Since that date the course has been offered annually to men and women of sufficient

maturity to understand the subject. The work consists of practice, reading, and attendance on lectures and demonstrations. Besides daily lectures by the college faculty, specialists from outside the college are secured to lecture on their various lines.

V. SPECIAL COURSE FOR FARMERS

Convocation week for the farmers of Rhode Island begins February 18 and closes February 21, 1918. Lectures on agricultural subjects are given hourly thru the day with abundant opportunity for discussion. The lecturers are members of the college faculty, and specialists from outside the college.

REQUIREMENTS FOR ADMISSION TO THE DEGREE COURSES

Units

The requirements for admission are reckoned in units. A "unit" represents the successful completion of a year's study of a subject, to which have been devoted not less than one hundred and twenty recitation periods of sixty minutes each, or their equivalent (*e. g.*, one hundred and eighty periods of forty minutes each). Fourteen units are required. A student may obtain this amount of entrance credit from high-school work or from examination.

Groups

The entrance subjects are divided into two groups, A and B. Those in A, unless otherwise indicated, are required of all candidates for admission. Candidates who have not studied algebra the past year are urged to review the subject during the summer before entering college. Observance of this warning will prevent many failures in college work.

GROUP A.

The school year is reckoned at thirty-six weeks, the minimum length.

English	108 weeks.....	3 units
Modern Language—other than English. 72 weeks.....		2 units
Algebra—for engineering students.....	54 weeks.....	1½ units
Algebra—for agricultural and home economics students, 36 weeks..		1 unit
Geometry, Plane	36 weeks.....	1 unit
Geometry, Solid—for engineering students only, 18 weeks.....		½ unit
Physics	36 weeks.....	1 unit
History	36 weeks.....	1 unit

The remainder of the fourteen units must be taken from.

GROUP B.*

No subject is accepted for more than the amount here stated or for less than one-half of a unit.

Foreign Language	216 weeks.....	6 units
Geometry, Solid—for other than engineering students, 18 weeks....		$\frac{1}{2}$ unit
Botany	36 weeks.....	1 unit
Algebra—for students in agriculture and home economics, 18 weeks		$\frac{1}{2}$ unit
Chemistry	36 weeks.....	1 unit
Geology	18 weeks.....	$\frac{1}{2}$ unit
Physiography	36 weeks.....	1 unit
Physiology	18 weeks.....	$\frac{1}{2}$ unit
History	36 weeks.....	1 unit
Drawing	36 weeks.....	1 unit
Domestic Science	18 weeks.....	$\frac{1}{2}$ unit
Shop Practice	18 weeks.....	$\frac{1}{2}$ unit
Farm Practice	18 weeks.....	$\frac{1}{2}$ unit

REGISTRATION.

Registration occurs on the first day of each term, from 9 A. M. to 12 M., and from 1 P. M. to 4 P. M. A special fee of one dollar will be charged for registration after the first day of each term.

Each student is required to sign the following form of application before registering for the current year:

I hereby make application for registration as a student in Rhode Island State College for the year. In consideration of such registration and the attendance consequent thereupon, I hereby engage and obligate myself cheerfully to observe and conform to the rules of said college, having specifically in mind, without excluding others, that in relation to hazing and class disturbances. I further engage promptly and on my own motion to withdraw from the college whenever I find myself unable or unwilling to carry out the obligation herein assumed.

METHODS OF ADMISSION

On any or all of the subjects named in both groups, satisfactory standings from any reputable high school will be accepted in lieu of examination, on presentation of a copy of the student's full record in the high school, showing clearly the nature of the work pursued in

* Other subjects not here named will receive due consideration if presented on the application blank, with a statement of the work done.

each subject, time devoted to it, and grade of work done. This copy must be duly signed by the proper official of the school, and must be accompanied by a certificate of good moral character. The latter, however, may be from any reputable source. On application, blanks showing definitely the full nature of the information desired from the high school will be furnished.

Candidates not presenting satisfactory standings from reputable high schools will be examined, over ground corresponding to the number of units attached, on all the subjects of Group A and on such of Group B as they may offer. Examinations for entrance will be held at the opening of the college year in September, as announced in the calendar, page 8.

SPECIFICATIONS OF GROUND TO BE COVERED*

GROUP A

These subjects, with the exception stated, are required of all students to the extent indicated by the number of units designated in each case.

Languages

ENGLISH, 3 UNITS.—In English two aims are sought: first, a knowledge of the language—including the acquisition of an ample vocabulary and power of effective expression—second, some acquaintance with the literature. To attain the first, grammar and composition must be thoroly studied. Thruout the secondary-school course there should be much practice in writing along a variety of lines suggested by the pupil's experience, his general interests, and studies other than English. Spelling, punctuation, accuracy of idiom, should receive due attention in all written work; while correct and forceful oral expression should also be insisted upon.

To meet the requirement in literature certain selections are to be made from two lists of works—one for reading, the other for closer study. It is hoped to foster in this way a taste for good books and an intelligent appreciation of them. Committing to memory selected passages and reading aloud are strongly urged. In all cases some knowledge of the author's life and his place in literature should be acquired, while a more exacting study of selected texts would lay emphasis on form and style, meaning of particular words and phrases, and the significance of allusions. The list of books prescribed for 1917-18 may be obtained from the nearest high-school principal.

* For any or all of the subjects described below the requirements of the College Entrance Examination Board, upon which these specifications are largely based, will be accepted. A circular stating these requirements in detail and blank forms of application for examination may be obtained by sending ten cents in stamps to the College Entrance Examination Board, Post Office Sub-Station 84, New York City.

ELEMENTARY GERMAN, 2 UNITS.—During the first year the work should consist of drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. During the second year the course should be a continuation of the first as regards grammar, composition, and conversation. The reading should consist of at least 200 pages of such texts as Arnold's *Fritz auf Ferein*, Wildenbruch's *Das Edle Blut*, Mosher's *Willkommen in Deutschland* and Benedix' *Der Prozess*.

ELEMENTARY FRENCH, 2 UNITS.—The course in French should parallel that in German. During the first year there should be drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. Thruout the second year the course should be a continuation of the first as regards grammar, composition, and conversation. At least 250 pages of such texts as Bruno's *Le Tour de la France*, Malot's *Sans Famille*, Mérimée's *Colomba*, Sarcey's *Le Siège de Paris*, and Hugo's *La Chute* should be read.

Mathematics

ALGEBRA, 1½ UNITS.—The requirement in algebra comprises the four fundamental operations; factoring; highest common factor and lowest common multiple; fractions; linear equations; exponents; radicals; quadratic equations; simultaneous equations involving quadratics; binomial theorem for positive integral exponents. Problems should be given at frequent intervals. Candidates for the courses in Agriculture and Home Economics are required to offer but one unit of this work.

PLANE GEOMETRY, 1 UNIT.—This requirement is met by the usual theorems and constructions of standard text-books, numerous originals, and applications.

SOLID GEOMETRY, ½ UNIT.—The ground is covered by the usual theorems and constructions of standard text-books, originals, and applications.

Science

PHYSICS, 1 UNIT.—This course should consist of class-room work based on a standard text-book, accompanied by lecture-table demonstrations and by numerous practical problems. A parallel course in individual laboratory work is desirable, but is not absolutely required. In the case of laboratory work, one hour of credit will be allowed for each two hours spent in the laboratory.

History, 1 unit

The requirement in history will be met by presenting any one of the following subjects: ancient history, especially Greek and Roman, with the chief events of the early Middle Ages to the death of Charlemagne (814); medieval and modern European history from 814 to the present time; English history; American history and civil government.

GROUP B

From this group units are to be taken, in addition to those of Group A, sufficient to make up the whole number required. Any combination of units, including fractions not less than one-half, will be allowed.

Languages

GERMAN, 2 UNITS.—The requirement for Elementary German is indicated under Group A. One unit will be also be allowed for third and one for fourth year work. Third-year study should emphasize reading and advanced composition. Suitable texts are Riehl's *Der Fluch der Schönheit*, Freytag's *Bilder aus der deutschen Vergangenheit*, Lessing's *Minna von Barnhelm*, Schiller's *Wilhelm Tell*, and Heine's *Die Harzreise*. The fourth year's work should mark a decided advance in the mastery of vocabulary and idiom as shown both in speaking and writing. The works may be made the basis for themes. The following reading matter is suggested: Freytag's *Soll und Haben*, Fulda's *Der Talisman*, Hauff's *Lichtenstein*, Scheffel's *Ekkehard*, Schiller's *Wallenstein*, *Maria Stuart*, or *Geschichte des dreissigjährigen Krieges* (Book III), Dahn's *Ein Kampf um Rom*, Goethe's *Dichtung und Wahrheit* (Books I-IV).

FRENCH, 2 UNITS.—The requirement for Elementary French is indicated under Group A. One unit will also be allowed for second and one each for third and fourth year work. In third year emphasis should be laid on reading. Some time ought also to be given to advanced composition. Among suitable texts may be mentioned Racine's *Athalie*, Corneille's *Le Cid*, Molière's *Le Bourgeois Gentilhomme*, Sandeau's *Mademoiselle de la Seiglière*, Vigny's *La Canna de Jonc*. From the fourth year's study increased facility in conversation and composition should be gained, and any modern French, other than technical, should be read with ease. Such texts as the following are recommended: the prose works of Dumas père, Hugo's *Ruy Blas*, La Fontaine's *Fables*, Sainte-Beuve's *Essays*, Taine's *Origines de la France Contemporaine*, Pellissier's *Movement Littéraire au XIX^e Siècle*. At least 600 pages should be read.

LATIN, 1 TO 4 UNITS.—A credit of one unit will be given for each year's work in Latin, covering in all a standard beginner's book, four books of Cæsar's Gallic War, six orations of Cicero and six books of Virgil's *Æneid*. It is expected that work in prose composition and sight reading will be included in each subject.

Mathematics

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—See Group A for other than engineering students.

Science

BOTANY, 1 UNIT.—The preparation in botany should include individual laboratory work recorded by notes and diagrammatic drawings. Field work is desirable, and should also be accompanied by notes. The notebook and drawings certified by the teacher should be presented at the time of application for entrance credit. The year's course of study should consist of three parts, viz.: 1. The general principles of the anatomy, morphology, phy-

siology, and ecology of seed plants. 2. The natural history of the plant groups. The structure, reproduction, and adaptations to habitat of one or two types from each group should be studied. 3. Classification. A brief study of the subdivisions of the above groups. Ability to determine species of flowering plants is not essential. Any standard text-book covering the above field may be used.

CHEMISTRY, 1 UNIT.—An elementary text-book, such as William's Elements of Chemistry or First Principles of Chemistry, by Brownlee and others, should be covered by recitations. At least one exercise per week must be devoted to individual work in the laboratory. The pupil must perform forty or more experiments, such as are described in the Report of the College Entrance Examination Board, 1909, and keep a notebook in which he describes the apparatus used, records the phenomena observed, and states the conclusions in his own words, in each experiment.

GEOLOGY, $\frac{1}{2}$ UNIT.—In geology, a study of the following subjects should be made: rock-forming minerals, their names and chemical constituents; earthquakes—their cause and effects; volcanoes—distribution, types, character of eruption, nature of erupted material; supposed physical state of the earth's interior; surface agencies destructive to rocks, with brief illustrations; processes of re-construction, with illustrations; rocks—classification, according to origin, rock fracture and dislocation, rock structure due to erosion, metamorphic rocks, mineral veins and their method of formation; conditions determining land sculpture; the geological periods, with land elevations, and the characteristics of climate, plant and animal life of each period.

PHYSIOGRAPHY, 1 UNIT.—This course should include a consideration of the earth as a globe, the atmosphere, the waters of the earth, the lands, life upon the earth, and the reactions between these elements. Special attention should be given to the questions of climate, the winds, the weather, tides, ocean currents, and to the effect of the ocean in modifying climatic conditions. Attention should be directed to the manner in which the land was originally formed and to the way in which the original formation has been and is being modified by the action of erosion, the winds, and frost. Thruout the course consideration should be given to the manner in which the various physical characteristics of the earth have affected life upon its surface.

PHYSIOLOGY, $\frac{1}{2}$ UNIT.—The textbook work should cover material equivalent to that of Martin's Human Body or Hough and Sedgwick's Human Mechanism. In addition the applicant should present a notebook, showing laboratory work on the elementary physiological processes and general structure of mammals.

ZOOLOGY, 1 UNIT.—The work should include: 1. The general natural history of a number of common vertebrates and invertebrates common to the locality where the work is given. 2. The classification of these forms into phylum, class and order, with the characteristics of the several groups. 3. The main anatomical features of one vertebrate, two arthropods (one an insect); an annelid, preferably the earthworm, a coelenterate, two protozoans (*Amœba* and *Paramoecium* recommended). 4. The general physiology of the above

types involving digestion, absorption, circulation, excretion, and nerve function. These should be compared with the same functions in the human body. 5. The following subjects should be brought before the student in connection with the foregoing studies: asexual and sexual reproduction, alternation of generations, regeneration, fertilization and segmentation of egg cells, adaptation, variations, evidences of relationship between similar groups, and the cell structure of animals.

Certified notebooks must be presented, which include notes upon work and discussion in classroom and drawings of the forms dissected.

History, 1 unit

See Group A.

Drawing, 1 unit

This may be either freehand or mechanical. If freehand drawing is offered, the candidate should submit at least fifteen drawings, the majority to be in pencil, certified as his work by the instructor. These should show ability to sketch from various objects with considerable accuracy of proportion and clearness of line, and a fair understanding of the rules of perspective and light and shade as applied in freehand sketching. A candidate may also present the equivalent of five hours per week for one year in elementary mechanical drawing, lettering, or sketching from models.

Domestic Science, 1-2 unit

In domestic science the student must present satisfactory evidence of knowledge in the following subjects: the use and care of the kitchen equipment, general cleaning processes, the marketable forms of staple foods. She must also show credit for at least twelve cooking laboratory lessons of two hours each.

Shop Practice, 1-2 unit

The candidate may offer carpentry or any of the various forms of benchwork given in a well-equipped manual training school, equivalent to five hours per week for one-half year.

Farm Practice, 1-2 unit

By "farm practice" is meant familiarity with the operations of the farm, such as the harnessing of teams, the use of tillage implements, and the care of dairy animals.

DEGREES

The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 17-27. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satis-

factory thesis in applied or economic science, and upon passing examinations in the subjects pursued. Candidates not graduates of this college must file with the committee on graduate study, not later than October first, a detailed statement of their previous work, certified by the proper authorities. They must select, not later than November fifteenth, a major and a minor subject which must be closely related and have the approval of the committee on graduate study and of the professor in whose department the principal work is done. Major subjects may be selected in any of the following departments: agriculture; botany; chemistry; zoölogy; bacteriology; home economics; electrical, mechanical and civil engineering. The minor may be selected from undergraduate subjects outlined in the catalog; the major, however, must be advanced work specially arranged with the individual professor. The thesis must be typewritten, upon paper of the size and quality prescribed, and two copies must be in the hands of the president not later than June first.

The requirements for the degree of Mechanical Engineer, Electrical Engineer, or Civil Engineer, consist of three years of successful professional practice subsequent to the Bachelor's degree, one of which must have been in a responsible position; the presentation of an acceptable thesis; and the passing of examinations upon the investigations involved in the thesis. The requisites for the degree of Master of Agriculture are the same as for the engineering degrees, except that five years of professional practice are required.

A fee of five dollars is charged for registration for an advanced degree. Students from outside the state pay a tuition fee of fifty dollars during the year of residence. The cost of a diploma is five dollars.

Teachers' Certificates

The following resolution adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island College will be received as evidence of the required qualifications in scholastic subjects for a teacher's certificate of the first grade."

Rhode Island State College also offers professional courses in all subjects required by the State Board of Education for a first grade teacher's certificate, and graduates of the college who have completed all the subjects in Psychology and Education will be accredited in full for a teacher's certificate of the highest rank.

By action of the Regents of the State of New York, taken June 9, 1910, the degrees of B. S. and M. S. from this college are accepted as a basis for the issuance of licenses to teach in that state.

Reserve Officers' Training Corps

A new feature of the college work is the establishment of a unit of the Reserve Officers' Training Corps in connection with the Military Department. The details of the subject will be found on page 79 of this catalog.

There is an increasing demand thruout the country for teachers of high-school grade who are able to give military instruction, so that students of Applied Science who can take the military training prescribed for the Officers' Reserve Corps will be adding an important asset to their professional equipment.

Expenses

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is \$25.00 a term, or \$50.00 a year for matriculants on and after September, 1917. Students who apply for admission as non-residents will be expected to pay tuition thruout their course unless there is a bona-fide change of residence of the parent or guardian.

The regular college expenses are tabulated as follows:

Board, \$4.00 per week (subject to change without notice).....	\$144 00
Room-rent, including heat and light.....	40 00
Incidental fee, \$5.00 per term.....	10 00
Student tax for Beacon, outside lectures, athletics, etc.....	10 00
Laboratory expense, \$5.00 per term, estimated.....	10 00

\$214 00

The first four items must be paid quarterly in advance; that is to say, \$51.00 will be required at the opening of the year, September 18, 1917, and also at each of the following dates: November 20, 1917; February 11, 1918; and April 19, 1918. Non-residents of the state should add to this sum \$12.50 for tuition each quarter. In order to secure dormitory accommodations, the student is required to deposit \$10.00 with the application, the amount to be

credited on the room rent for the first quarter. If the student fails to take the room, the deposit is forfeited. During vacations dormitories and fraternity houses will not be open for occupancy except under special arrangements with the college office. In such case, a higher rate for room rent will be charged, such rate to be adjusted on individual application. The item of laboratory expense includes all material used in the various laboratories, and the destruction, breakage, or marring of apparatus and tools, and must be paid when bill is presented at the close of each term.

The probable cost of books will be from \$30.00 to \$50.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from \$10.00 to \$25.00. A fee of 50 cents will be charged for each second examination to make up a condition. Graduates pay the cost of diplomas, \$5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter.

Expenses for two-year (short course) students are tabulated as follows:

Board, \$4.00 per week (subject to change without notice).....	\$96 00
Incidental fee, \$3.50 per term.....	7 00
Laboratory expense, estimated \$5.00 per term.....	10 00

The first two items must be paid in advance, per term; that is, the first payment will be required at entrance, October 15, 1917, and will amount to \$51.50, and a second payment of \$51.50 will be required on January 21, 1918.

UNIFORM.—Every able-bodied male college student is required to take military science and tactics during the first two years and to wear a uniform when on drill. The uniform is provided by the United States Government, free of charge. This uniform may be worn only on drill and must be properly cared for; otherwise, the student may be required to replace articles unnecessarily worn or damaged. At the beginning of the junior year, the student will elect whether he shall undertake the duties of the Reserve Officers' Training Corps for the coming two years or not; and, in accordance with his election, will be provided with the necessary articles of uniform. Students who elect the Reserve Officers' Training Corps receive from the United States Government commutation of subsistence amounting to eight or nine dollars per month, the actual rate not having been fixed by the Government.

TRANSPORTATION.—The college conveys day-students to and from the railroad station free of charge. Once at the beginning and end of each term, trunks will be conveyed to and from the station for students living in dormitories under college control.

BOARDING STUDENTS.—The price of board for 1917-18 is at present fixed at \$4.00 per week. Owing to the uncertainty of prices for all forms of provisions and labor, the right is reserved to make change in the rate of board, at such times as may appear necessary to do so. It is, however, guaranteed that board will be furnished students at cost. Students who leave *regularly every week* on Friday afternoon and return Monday morning will receive a rebate for time of absence. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the holder of such ticket. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance.

CASES OF ILLNESS.—Arrangements for ascertaining and handling cases of illness are as follows: Each floor of the dormitory and each house has a student officer, called a monitor, appointed and paid by the college. A part of his duties is to report cases of illness. The room-mate also reports such illness to the student head-waiter in the dining-room, who sends the meal to the room and reports his action to the registrar. This official notifies the superintendent of buildings, who calls on the case and reports conditions back to the office, and such action is then taken as may seem advisable. A small hospital room is fitted up in Davis Hall, where the patient may be moved, and in which he may have entire quiet and such care and attention as may be required.

DORMITORIES FOR MEN.—East Hall affords excellent accommodations for men students. The two upper floors are entirely devoted to rooms for students. The sanitary conveniences on each floor are ample, including a full complement of shower baths. The first floor contains a social room for the men, two dining-rooms with capacity for one hundred and fifty students each, and kitchen with good equipment. South Hall and Watson House are used as fraternity houses, accommodating from twenty-five to thirty men each, while the Beta Phi fraternity has erected its own house. The Delta

Alpha Psi fraternity is now erecting a house for its own use. Three houses in the village of Kingston are also hired by the college for fraternity houses.

DORMITORY FOR WOMEN.—During the summer of 1909 the interior of Davis Hall was entirely reconstructed. On the first floor are the administration offices and the office of the extension department. The upper floors of the building are utilized for the women's dormitory. The accommodations for women students in this building are under careful supervision, and compare favorably with those at any women's college in the country. There is a neat hospital, with all necessary adjuncts. The oversight of the young women is efficient, kindly, and painstaking. Attention is especially invited to the facilities and arrangements for the welfare of young women.

FURNITURE.—The rooms in the women's dormitory are provided with necessary furniture, including mattresses, but no other bedding material. *All students in the men's dormitory are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from \$8.00 to \$10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold when the student leaves, for one-half to three-fourths the original price. All students should bring with them such articles as sheets, blankets, pillow, pillow-slips (all for single bed), and towels. Men students are required to purchase mattresses at the college.

ROOMS IN THE VILLAGE.—Furnished rooms in private houses for students who occupy them thruout the college year range from \$1.25 to \$2.50 per week. Arrangements for such rooms should be made by the individual, who may procure lists of available rooms thru the college office.

COLLEGE STORE.—Students will be required to pay cash at the store for all books and other supplies.

DAMAGE FUND.—All damage not due to ordinary wear will be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.

2. Students found guilty of such damage, but not acknowledging and settling for the damage will be charged double the cost of repair.

3. Students will be responsible for damage in their own rooms. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Religious Influences

This college is a state institution, and consequently, the widest latitude is given to all creeds and forms of religious belief. Simple assembly exercises are held on one day of each week and are conducted by the president or some other member of the faculty. It is required that students attend assembly.

A branch of the Intercollegiate Young Men's Christian Association is doing active work among the men students, holding a meeting weekly thruout the year. This association conducts courses in Bible study, and is taking the lead in endeavoring to establish sound and high ideals of college life.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and if possible, to join its membership. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

The College Lecture Association

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to introduce talented speakers upon subjects both entertaining and instructive. The association may be looked upon as a permanent and important factor in college activities.

EQUIPMENT

FARM AND CAMPUS.—The landed property of the college has a total area of 170 acres. About forty-one acres of this area are devoted to buildings, lawns, and athletic grounds; nine acres are in forest; and six are being developed as an arboretum. Thirty-five

acres are used for the field investigations of the experiment station, which are valuable object lessons in agricultural instruction. The remainder is used for garden and orchard, and for raising crops for the live stock. The total value of land, buildings, and equipment is nearly \$400,000.

AGRICULTURAL BUILDINGS.—The agricultural buildings consist of a commodious dairy barn with laboratories for instruction in farm dairying and milk testing; a horse barn of modern construction; a greenhouse with an area of 10,000 square feet; a building attached to the greenhouse for class work in agronomy and horticulture, and a group of buildings used for instruction and experimentation in poultry raising.

ENGINEERING BUILDINGS.—The engineering department is equipped with modern machine, forge, and pattern-making shops, located in a building known as Ladd Laboratory. In Lippitt Hall, a granite building, 134 by 40 feet, are housed the lecture rooms, drawing rooms, testing rooms, and engineering laboratories of the department. A boiler house and a dynamo room, from which heat, power, and light are furnished for the various buildings, are a part of the engineering outfit for practical instruction and for experimentation in electrical and steam engineering.

SCIENCE HALL.—This building was first occupied in October, 1913. It consists of three stories and a basement, measures 154 by 60 feet, and is built of native granite. Here are housed the departments of chemistry, physics, zoölogy, bacteriology, and botany. Each department is provided with commodious laboratories, recitation room, and department library room. An amphitheatre having a seating capacity of 150 and provided with suitable projection apparatus, serves for the common use of the various departments requiring such a room.

HOME ECONOMICS LABORATORIES.—The special laboratories of this department are located in South Hall and in a small building near it.

TAFT LABORATORY.—The laboratories and offices of the experiment station are housed in a granite building known as Taft Laboratory.

DRILL HALL AND ATHLETIC HOUSE.—The drill hall, a room 134 by 40 feet, located in Lippitt Hall, is used both as an armory and as a gymnasium. A dressing room and bath room are attached to the hall. An athletic house provided with bath and dressing rooms for out-of-door sports is located at the athletic field, which is equipped with cinder track and straightaway for track athletics. Tennis courts for both men and women are also provided.

The Library

The library occupies two large adjoining rooms in Lippitt Hall, and numbers over seventeen thousand volumes. The books are arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a card catalog gives author, title, and subject entries. As the library has been from the first intended for reference work, the various departments of instruction have made their selections with the greatest care. In the reading-room, one hundred and twenty of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

Since the library has been a government depository twenty-five hundred books and pamphlets have been received, which are of value in scientific investigation and research.

The library is open every week day from 8:00 A. M. to 6:00 P. M., with the exception of an hour at noon. The librarian or her representative is in constant attendance, to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the State are at liberty to use the library.

Location

The college campus is one and one-half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. The ride from Providence is about forty to forty-five minutes in length. From New York the time is some four hours.

Telephone Calls

Except in cases of extreme emergency, the college office cannot undertake to call students to the telephone. Men students boarding at the college may be reached over the pay-station telephone at East Hall, Narragansett Pier 9259 J, at 7:00 to 7:30 A. M., 12:00 to 12:30 P. M., and 6:00 to 6:30 P. M. Women students may be reached over the pay-station telephone at Davis Hall 9259—W, at 7:30-8:00 A. M., 12:30-1:00 P. M., and 6:30-7:30 P. M.

DEPARTMENTS OF INSTRUCTION

The following subjects are offered in the different departments. All subjects in the departments of instruction preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture

PROFESSOR ADAMS, PROFESSOR COOLEY, PROFESSOR RICKEY, ASSISTANT PROFESSOR BURDICK, MR. GODIN, MR. CORRIVEAU.

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work outlined above, all students registered for a degree in agriculture will be required to show certain familiarity with the ordinary operations of the farm, before such degree is given.

In order that those students who have not had an opportunity to receive training in the practical work of the farm may become familiar with some of the more common operations, they will be required, during their connection with the college, to do a certain amount of routine farm work without pay. This will include work in the dairy barn, poultry yard, greenhouses and gardens. This training will be in addition to the laboratory credits prescribed in the regular course. The amount of such work required will depend upon the efficiency shown by the student. No college credits will be given for this work, yet the neglect of this phase of the training may be considered a sufficient cause for dismissal from the institution. Students taking practical work upon farms during the summer vacations will be required to furnish a certificate from their

employers, stating the time spent on the farm and the kind and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is to elect during the Senior year.

AGRONOMY

PROFESSOR ADAMS, ASSISTANT PROFESSOR BURDICK

The instruction in agronomy may begin the first term of the Sophomore year, when a study is made of the forage plants. Following this work are subjects dealing with the other field crops and their uses as food for man and beast. In the work with soils and fertilizers, especial emphasis is placed upon the problems connected with the proper use of chemical manures.

The business side of farm life is given attention in the subjects treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment station, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery. A well-equipped blacksmith shop is also provided.

Students have the advantage of the field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects

II. Forage Crops.—History and development of the plants used for forage; silage, methods of construction of silos. *Two recitation credits per week, first term required of Sophomores in Agriculture.*

III. Soils and Fertilizers.—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Four recitations and one and one-half laboratory credits per week, first term. Required of Juniors in Agriculture. Option for Juniors in Applied Science. Prerequisite: Chemistry I and II.*

IV. **Farm Crops.**—Origin and history; production and place in the rotation of clovers, grasses, and root crops. *Three recitation credits and one laboratory credit per week, second term. Required of Juniors in Agriculture. Option for Juniors in Applied Science. Prerequisite: Botany I and II.*

VI. **Farm Machinery.**—Development of farm machinery, methods of construction, function, and operation. *Two recitation credits and one laboratory credit per week, second term. Option for Juniors in Agriculture. Mr. Burdick.*

VII. **Farm Management.**—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming accounts. *Two recitation credits per week, second term. Required of Juniors in Agriculture. Prerequisite: Agronomy III and IV.*

VIII. **Farm Management. (Advanced.)**—Individual problems of farm management are assigned. Field trips are made for studying different types of farming. Problems in planning cropping systems and other management work. There will be at least two one-day field trips. *One recitation and two laboratory credits per week, second term. Elective for Seniors in Agriculture.*

IX. **Literature.**—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports on special topics. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.*

X. **Agricultural Experimentation.**—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits per week, second term. Required of Seniors in Agriculture.*

XI. **Plant Breeding.**—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Three recitation credits per week, first term. Required of Seniors in Agriculture. Option for Seniors in Applied Science. Prerequisite: Botany I and II.*

XII. **Farm Accounting.**—Aims and objects of farm accounts, farm inventories, single enterprise accounts, complete set of farm accounts and special records. Emphasis will be placed upon the interpretation of results as applied to the organization of a farm. *One recitation and one laboratory credit per week, first term. Elective for Seniors in Agriculture.*

A. **Soils and Fertilizers.**—An elementary course on the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Five recitation credits and one laboratory credit per week. Required of Short-Course students in Agriculture, first year.*

B. **Crops and Rotations.**—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various types of farms. *Five recitation credits and two laboratory credits per week, first term. Required of Short-Course students in Agriculture, second year.*

C. **Farm Management.**—An elementary course on the principles of farm management, equipment, cost of production. *Three recitation and one*

laboratory credit per week, second term. Required of Short-Course students in Agriculture, second year.

D. Farm Machinery.—Care and repair of farm implements. *One recitation and three laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year.* Assistant Professor Burdick.

ANIMAL HUSBANDRY

PROFESSOR COOLEY, PROFESSOR RICKEY, ASSISTANT PROFESSOR BURDICK

The subjects in animal husbandry are so arranged as to furnish practical as well as theoretical instruction in the selection, care and management of live stock on the farm. All students who graduate in agriculture are required to study breeds of stock, stock-judging, and veterinary practice. The student is taught how to select and care for farm animals. Students specializing in animal husbandry are offered advanced stock-judging, the principles of feeding, breeding, and the management of herds, flocks, and studs. Work in dairying is offered during the second term of the Junior year, and one who cares to specialize will find an elective thruout the senior year.

Instruction in poultry culture is given during the Senior year, and is both practical and theoretical. During the same year an elective is offered in advanced poultry judging and poultry investigation. The equipment in poultry is particularly strong. The college poultry plant enables the student to obtain a large amount of practical experience in incubation, brooding, feeding, and general management. In addition to the poultry stock in the college yards, students have the opportunity of following the investigations which are being conducted by the experiment station. An eight weeks' course in poultry keeping is offered also during the winter months, full information concerning which may be obtained by addressing the President of the college.

Subjects

I. Stock Judging.—Scoring and comparison of various types of horses, cattle, sheep and swine. Study of the special purpose or special type animal. *Two laboratory credits per week, second term. Required of Freshmen in Agriculture.* Professor Cooley.

II. Advanced Stock Judging.—A continuation of the work given in Animal Husbandry I in the judging of the various classes of farm animals. Tracing of pedigrees. Students chosen to represent the college in the annual

stock judging contest will be credited with this subject. *Two laboratory credits per week, second term. Elective for Juniors or Seniors in Agriculture.* Professor Cooley.

III. **Breeds.**—History and characteristics of the principal breeds of farm animals. A study of conditions to which each is adapted. *Two recitation credits per week, second term. Required of Freshmen in Agriculture.* Professor Cooley.

IV. **Principles of Breeding.**—A study of the science and art of breeding. Discussion of the laws of heredity as applied to improvement of animal types. *Three recitation credits per week, second term. Required of Seniors in Animal Husbandry. Option for Seniors in Applied Science. Elective for others. Prerequisite: Zoology III.* Professor Cooley.

V. **Management of Dairy Cattle.**—This course covers the field of milk production. It includes the building up of the dairy herd; the proper care of dairy cattle under different conditions; the dairy barn; special problems of feeding for milk production; advertising; fitting for sale and show ring. *Two recitation credits per week, first term. Elective for Seniors in Agriculture.* Professor Cooley.

VI. **Feeds and Feeding.**—Composition of feeds, principles of animal nutrition. Various methods of feeding farm animals. Balanced rations. Feeding standards. *Three recitation credits per week, first term. Required of Seniors in Animal Husbandry. Elective for Seniors in Horticulture and Applied Science. Prerequisite: Chemistry XIV.* Professor Cooley.

VII. **Dairy Practice.**—Lectures and laboratory practice in Babcock test and in handling milk and making butter on the farm. Herd testing methods. *One recitation and two laboratory credits per week, second term. Required of Juniors in Animal Husbandry. Elective for others.* Assistant Professor Burdick.

VIII. **Dairy Practice.**—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and two laboratory credits per week, thruout the year. Elective for Seniors in Agriculture.* Assistant Professor Burdick.

IX. **Research and Literature.**—*Hours to be arranged, first term. Elective for Seniors in Agriculture.* Professor Cooley.

X. **Veterinary Practice.**—Veterinary anatomy, materia medica, obstetrics, pathology. Combating disease from the farmer's standpoint. Causes and treatment of injuries. *Three recitation credits per week, first term. Required of Juniors in Agriculture. Prerequisite Zoology X.* Professor Cooley.

XIIa. **Poultry Culture.**—A study of all branches of poultry keeping. *One recitation credit per week, first term. Required of Juniors in Agriculture.* Professor Rickey.

XIIb. **Poultry Keeping.**—Laboratory work consisting of pen practice, incubation, brooding, killing and dressing. *Two laboratory credits per week, second term. Elective for Juniors in Agriculture.* Professor Rickey.

XIII. Judging Poultry.—Practice in judging standard poultry both by comparison and score card methods. *Two laboratory credits per week, first term. Elective for Seniors in Agriculture.* Professor Rickey.

XIV. Poultry Husbandry.—Study of poultry investigations and experimental work in various lines of poultry keeping. *At least two laboratory credits per week, thruout the year. Elective for Seniors in Agriculture and Applied Science, first term.* Professor Rickey.

XV. Management of Beef Cattle and Horses.—During the first nine weeks the course will cover practical methods of beef production. Studies will be made of successful practices in feeding for the market as well as advertising, fitting for sale and show ring, and the general care and management of beef cattle. During the last nine weeks, similar studies will be made in horse production, including market classes of horses, their production and utility, and successful methods of handling and training horses. *Two recitation credits per week, first term. Elective for Seniors in Agriculture.* Professor Cooley.

XVI. Management of Sheep and Swine.—During the first nine weeks the best systems of sheep husbandry will be studied. This will include rearing for mutton and wool; production of spring lambs; fattening sheep and lambs for market; general care and management of the breeding flock; advertising, fitting for sale and the show ring. During the last nine weeks similar studies will be made in pork production, including a study of foodstuffs with reference to their adaptability to pork production. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.* Professor Cooley.

A. Breeds.—Breeds of horses, cattle, sheep, and swine. Emphasis is placed on the type best fitted to the agriculture of New England. *Two recitation credits per week, thruout the year. Required of Short-Course students in Agriculture, first year.* Professor Cooley.

B. Stock Judging.—Judging of the various classes of animals and their adaptability to different purposes, as cattle for milk or beef production, horses for driving or draft. *Two laboratory credits per week, thruout the year. Required of Short-Course students in Agriculture, first year.* Professor Cooley.

C. Dairy Practice.—Babcock test for dairy products, production of sanitary milk, and butter making. *One recitation and three laboratory credits per week, first term. Required of Short-Course students in Agriculture, second year.* Assistant Professor Burdick.

D. Principles of Feeding.—Compounding rations. *Three recitation credits per week, first term. Required of Short-Course students in Agriculture, second year.* Professor Cooley.

E. Principles of Breeding.—A study of the selection of animals, heredity, and variation. *Two recitation credits and one laboratory credit per week, second term. Required of Short-Course students in Agriculture, second year.* Professor Cooley.

G. Live Stock Care and Sanitation.—Housing, care, and management of farm animals. Practical directions for handling of stock on the farm.

Two recitation credits per week, first term. Required of Short-Course students in Agriculture, second year. Professor Cooley.

H. Poultry Keeping.—Study, demonstrations, and work in all of the practical branches of the poultry department. *One recitation and two laboratory credits per week, thruout the year. Required of Short-Course students in Agriculture, first year. Professor Rickey.*

I. Breeds of Poultry.—A study of the different breeds and types of poultry. *One laboratory credit, first term, second year. Professor Rickey.*

Bacteriology

PROFESSOR HADLEY

The instruction in bacteriology is arranged to meet the requirements of two classes of students:

1. In the first place the subject is presented in an elementary way for those whose main interest lies in other fields of work, but who at the same time desire a general knowledge of micro-organisms and their relation to problems of human life, including agriculture, sanitation, foods, and the many problems of personal and public health and hygiene. For such students Bacteriology Ia and Ib are offered. The subject requires some familiarity with certain fundamental biological principles, an appreciation of which can be derived through Zoölogy I or Botany I. For this reason one or the other of these subjects is made a prerequisite. Bacteriology I is taught by means of laboratory work supplemented by lectures and required reading.

2. In the second place the work in bacteriology is arranged to afford opportunity for specialization on the part of the students in the Applied Science Course who anticipate entering some branch of applied bacteriology after graduation. Such specialization naturally looks forward to service in (1) the educational, (2) the commercial, (3) the municipal or (4) the research field, as exemplified by (1) college teaching, (2) private manufacturing laboratories of biologic products, (3) departments of public health (city or state), and (4) the State Agricultural Experiment Stations and privately endowed institutions of research, respectively. For students desiring to specialize in any of these fields, Bacteriology IIa and IIb are offered. These subjects are not suited to and are not recommended for students who do not intend to specialize in bacteriology or in a closely allied subject. They should be preceded by advanced language work in German (German III), by other

biological subjects which afford a foundation in anatomy (both gross and microscopic) and physiology; and, if possible, should be preceded or accompanied by physiological chemistry (Chemistry XIX.)

In Bacteriology IIa, opportunity is offered to acquire advanced bacteriological technique. The program is confined largely to laboratory work. In the second term of advanced bacteriology (IIb) advanced technique is continued with special reference to diagnostic blood tests involving agglutination, precipitation and complement-fixation methods. In addition the student may be permitted to pursue individual work on a selected problem and opportunity is offered to become familiar with some of the methods of bacteriological research. This work may be outlined with special reference to the particular branch of the subject which the student plans to enter, such as agricultural, industrial or pathogenic bacteriology. Bacteriology IIb also involves assigned reading and the discussion (seminar) of bacteriological and protozoological theories and problems and requires a minimum of ten hours attendance.

Subjects

Ia. General Bacteriology (systematic).—A subject designed to give the student a general knowledge of the bacteria; a study of laboratory methods and technique for the cultivation of bacteria; the isolation and determination of unknown species. *One recitation credit and two laboratory credits, first term. Prerequisite: Botany I or Zoölogy I. Required of Seniors in Agriculture and Home Economics. Elective for Juniors and Seniors in other courses. Bacteriology Ia and Ib must be taken continuously.*

Ib. General Bacteriology (applied).—A subject designed to acquaint the student with the varied application of Bacteriology to practical problems, including the bacteriology of air, water, milk and other dairy products, together with the relation of bacteria to agronomy, dairying, hygiene and to the prevention, diagnosis and treatment of communicable diseases. *One recitation credit and two laboratory credits, second term. Prerequisite: Bacteriology Ia. Required of Seniors in Agriculture and Home Economics. Elective for Juniors and Seniors in other courses. Bacteriology Ia and Ib must be taken continuously.*

IIa. Advanced Bacteriological Technique.—A study of special methods employed in the investigation of bacteriological problems. The work includes the preparation of culture media, the bacteriological examination of air, shellfish and meats; a study of enzyme production by bacteria; of acid production; the relation of bacterial growth to oxygen supply; determination of thermal death point, of testing the germicidal power of unknown disinfectants; filtration; pathogenesis and virulence; experimental inoculations, post-mortem

examinations; active and passive immunization. *One recitation credit and three laboratory credits per week, first term. Prerequisite: (beginning 1917), Zoölogy VIII, and (beginning 1918), German III. Elective for Seniors who have passed with B grade in Bacteriology Ia and Ib.*

I Ib. Advanced Bacteriological Technique: Theories and Problems.—Laboratory studies involving the examination of the blood by bacteriological, histological and serological methods; serological diagnosis; forensic blood tests, etc. Assigned reading and discussions. *One recitation and three laboratory credits per week, second term. Elective for Seniors who have passed with credit in Bacteriology IIa.*

Botany

PROFESSOR MERROW, MR. SPENCER

The aim of the department is to give a general knowledge of plant life, followed by subjects of an economic nature. The college is well located for carrying on this line of work. The native flora is extensive, and an abundance of material is furnished by the cultivated plants of the gardens and fields of the college farm. The green houses supply fresh material for winter use, and the herbarium of 6,000 specimens is a useful reference collection. The laboratory is equipped with dissecting and compound microscopes, a microtome, paraffin bath, and simple physiological apparatus. Charts and models are provided for lecture demonstrations. A good working library, including several botanical periodicals, is an important factor in the outfit for instruction.

Subjects

I. General Botany.—A study of common plants, their structure, physiology, evolution, and adaptation to environment. *Two laboratory credits and one recitation credit per week thruout the year. Required of Freshmen in Agriculture, Applied Science, and Home Economics. Professor Merrow, Mr. Spencer.*

II. Botany of crops and weeds.—*Two laboratory credits and one recitation credit per week, first term. Required of Sophomores in Agriculture and Applied Science. Professor Merrow.*

III. Trees and shrubs.—The determination of native and introduced trees and shrubs in summer and winter condition. *One laboratory or field credit per week, thruout the year. Required of Sophomores in Agriculture. Mr. Spencer.*

IV. Forestry.—The management of New England wood lots. *Two credits per week, second term. Given in alternate years, 1917, 1919. Option for Juniors or Seniors in Agriculture. Mr. Spencer.*

V. Histology.—Seed plants are studied by the usual histological methods of imbedding, sectioning, and staining. *Four laboratory credits and one recitation credit per week; first term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.* Professor Merrow.

VI. Pathology.—Diseases caused by parasitic fungi and the remedies for them. *Four laboratory credits and one recitation credit per week, second term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.* Professor Merrow.

VII. Assigned Work.—*Three credits thruout the year. Elective for Seniors in Applied Science and Agriculture.* Professor Merrow.

A. Plant Life.—Elementary agricultural botany.—*Two and a half laboratory credits and one recitation credit per week, thruout the year. Required of Short-Course students in Agriculture, first year.* Mr. Spencer.

Chemistry

PROFESSOR LEIGHTON, ASSISTANT PROFESSOR SMITH, PROFESSOR HARTWELL, MR. PERKINS

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. The work is designed to give a thoro elementary knowledge of theoretical and descriptive inorganic chemistry, including the principal technical processes, and a brief account of the carbon compounds. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Two periods per week for the first half-year and three for the second half-year are devoted to the lectures and recitations, and three hours per week for a half-year to the practical work in the laboratory, where the student has an opportunity to verify some of the chemical theories and to become familiar with substances and their chemical behavior. During the second half of this year the laboratory period is devoted to qualitative analysis, which for chemical engineers and Applied Science students continues thru the first half of the Sophomore year. The subject is taught in part by means of recitations and lectures, but mainly by work in the laboratory. Students are required to complete a systematic course in basic and acid analysis, and to analyze correctly a number of alloys, salts, and minerals.

Quantitative analysis is taught mainly by laboratory practice, but sufficient time is devoted to lectures and recitations to teach thoroly the fundamental principles involved. The work comprises gravimetric and volumetric analysis, and the quantitative determina-

tion of salts, alloys, ores, minerals, and commercial and food products. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such theoretical and practical knowledge as to prepare him for analytical work of any kind.

The study of organic chemistry begins with a short course, designed to cover the general principles and methods, and to include a description of the more important compounds. The subject is continued by those who wish to specialize in chemistry in a more extended course covering the aromatic series and the chemistry of the dyestuffs, and accompanied by laboratory work in organic preparations and analysis. The theoretical and basic principles of chemistry, with their general application, are thoroly studied by recitation, lectures, and laboratory work in the course in physical chemistry.

The descriptive side of industrial chemistry, which comprises a general survey of the technical applications of chemical principles to the arts and industries, is studied by recitation work; while practical technical operations, such as textile coloring, suited to the needs of the individual student, are studied by laboratory practice.

Agricultural chemistry, required of agricultural students in the Sophomore year, embodies the chemistry of soils and fertilizers, also the chemistry involved in the changes which take place during the growth of animals and plants, as well as in the storage or manufacture of the ordinary farm products.

Subject XXI is intended to familiarize the student with the general field of chemical literature, and to inculcate the habit of keeping up with the recent advance in chemical science by reports and discussion of articles appearing in the chemical journals. This course is preparatory for Subject XX, which involves original investigation.

The laboratory occupies the first floor and a part of the basement of the new Science Hall, seventeen rooms altogether, including a large general laboratory, organic and analytical laboratories, weighing room, library, large lecture room, recitation room, two offices, store rooms and supply room. It is well equipped with apparatus and consulting library for teaching the subjects mentioned below.

Subjects

I. General Chemistry.—*Two recitation and one and one-half laboratory credits per week, first term. Required of Freshmen in all courses. Assistant Professor Smith, Mr. Perkins.*

II. General Chemistry and Qualitative Analysis.—*Three recitation and one and one-half laboratory credits per week, second term. Required of Freshmen in all courses. Professor Leighton, Mr. Perkins.*

III. Qualitative Analysis.—*Basic and acid analysis; analysis of salts, industrial and natural products. Three laboratory credits per week, first term. Required of Sophomores in Applied Science and Chemical Engineering. Professor Leighton, Mr. Perkins.*

IVa. Organic Chemistry.—*Three recitation credits and one and one-half laboratory credits per week, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science, Professor Leighton.*

IV. Organic Chemistry.—*Three recitation credits and one laboratory credit per week, first term. Required of Sophomores in Home Economics, Agriculture, and Applied Science. Elective for others who have completed Chemistry III. Assistant Professor Smith.*

V. Organic Chemistry (advanced).—*To be given alternate years. Given in 1918. Four recitation credits per week, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Leighton.*

VI. Organic Chemical Laboratory.—*Three laboratory credits per week, second term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Assistant Professor Smith.*

VII. Quantitative Analysis.—*Gravimetric and volumetric analysis. Analysis of minerals, ores, alloys, and industrial products. Three laboratory credits per week, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Assistant Professor Smith.*

VIII. Quantitative Analysis.—*Five laboratory credits per week, second term, Junior year. Required of students in Chemical Engineering, and of students who take the Chemical Option in Applied Science. Elective for those who have completed Chemistry III. Assistant Professor Smith.*

X. Quantitative Analysis.—Food Analysis.—*To be given alternate years; given next in 1918. Four laboratory credits, second term. Required of Seniors and Juniors in Home Economics. Elective for others who have completed Chemistry IV. Assistant Professor Smith.*

XII. Physical Chemistry.—*To be given alternate years. Given next in 1919. Four recitation credits, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Professor Leighton.*

XIV. Agricultural Chemistry.—*Four recitation credits per week, second term. Required of Sophomores in Agriculture. Prerequisite: Chemistry I, II and IV. Professor Hartwell.*

XV. Gas Analysis.—See Mechanical Engineering XV.

XVI. Industrial Chemistry.—*Four recitation credits per week, first term. Required of Juniors in Chemical Engineering and of Juniors who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Leighton.*

XVII. Industrial Chemistry.—The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis and textile coloring. *Four laboratory credits per week, first term. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical Option in Applied Science. Professor Leighton.*

XIX. Physiological Chemistry.—To be given alternate years. Given next in 1919. *Four credits per week, second term. Required of Seniors and Juniors in Home Economics. Assistant Professor Smith.*

XX. Assigned Work.—*Three credits per week, thruout the year. Required of Seniors in Chemical Engineering who do not take the work in the Reserve Officers' Training Corps. Required of Seniors who take the Chemical Option in Applied Science for the first term. Professor Leighton.*

XXI. Reports and Discussion of Chemical Subjects and Recent Investigations.—*Two credits per week, thruout the year; required of Seniors in Chemical Engineering; and of Seniors taking the Chemical Option in Applied Science. Professor Leighton.*

XXII. Organic and Physical Chemical Laboratory.—*Required of Seniors in Chemical Engineering, and of those who take the Chemical Option in Applied Science, two credits, second term. Professor Leighton.*

Drawing,—Freehand

MISS ELDRED.

The aim of the subjects described below is to supply the practice in drawing necessary for subsequent work in the science laboratories, to give an elementary knowledge of the history of art, and to develop some appreciation of the beautiful in art and nature. For the first term, the work comprises outline drawing in pencil mainly from plant and animal forms. The work of the second term includes some consideration of perspective and of the principles of design, and for the home economics students the principles of color harmony, and the use of color in design and decoration. The object of this work is to develop appreciation of color and to enable the student to ex-

ercise a more intelligent and sensitive discrimination in its use. In the Junior year, special work is arranged for the first term to accompany and illustrate the home economics course, treating of the arrangement and decoration of the house. The brief course in the history of art aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. The department has a considerable equipment of illustrative material for this work, including a collection of about one hundred and fifty casts and over three hundred photographs of folio or larger size, with many smaller prints, among them two thousand University Prints, illustrating Greek and Roman sculpture, and the art of Italy, Germany, and the Netherlands.

Subjects

II. Pencil Drawing from Objects.—*One laboratory credit per week, first term. Required of Freshmen in Agriculture. One laboratory credit per week, thruout the year. Required of Freshmen in Applied Science and Home Economics. Five laboratory credits per week, first term. Elective for Freshmen.*

III. History of Art.—*Two recitation credits per week, second term. Required of Juniors in Home Economics. Two recitation credits per week, first term. Required of Seniors in Home Economics.*

IV. Color Problems.—*One laboratory credit per week, second term. Required of Freshmen in Home Economics*

V. Drawing in Charcoal from Still Life and the Cast.—*Two laboratory credits per week, second term. Elective.*

VI. Pen-and-ink Drawing, Water-Color, or Pastel.—*Two laboratory credits per week, second term. Elective.*

VII. Modeling.—*Two laboratory credits per week, second term. Elective.*

VIII. Work Illustrating Home Economics VII.—*One laboratory credit credit per week second term. Required of Juniors in Home Economics.*

IX. History of American Art.—*One recitation credit per week, second term. Elective.*

X. Modern European Art.—*One or two recitation credits per week, second term. Elective.*

Economic and Social Science

PRESIDENT EDWARDS.

Subjects

I. Economics.—Text-book, supplemented by lectures, reading, and essays. *Three recitation credits per week, first term. Required of Seniors in all courses.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.*

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmers, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations; federation of rural social forces. *Elective.*

Engineering.—Chemical

PROFESSOR LEIGHTON, ASSISTANT PROFESSOR SMITH, MR. PERKINS

The course in chemical engineering is based upon the principles of chemistry and of mechanical and electrical engineering. It is designed to prepare men for those industries in which chemical processes play a vital part. The subjects in chemistry aim to train the student thoroly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the various branches of chemical analysis, and to make him familiar with the practical applications of chemistry. The subjects in mathematics, physics, mechanical and electrical engineering aim to give the training necessary to solve the mechanical and electrical problems that present themselves when chemistry is applied to the industries.

While the primary purpose is to turn out men well equipped to take up any line of chemical engineering, yet, owing to the important textile interests in this state, and the increasing importance of the manufacture of chemicals and dyestuffs, especial emphasis is placed on the manufacture and application of dyes. The following are some of the industries which offer opportunities to the chemist and the chemical engineer:—The manufacture of chemicals and dyestuffs; the bleaching and dyeing of cotton, wool and silk; the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, sugar, paper pulp, paper, soap, paint and varnish; the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion, or destructive distillation to form gas, coke, and tar, embracing further the whole field of forest products utilization; and the processes of water and sewage purification.

A detailed description of the subjects will be found under their respective departments.

Engineering,—Civil

PROFESSOR WEBSTER, MR. WHITEHEAD.

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various fields of civil engineering. With this object in view, application of the theories and principles learned in the classroom is made in the field, laboratory, and drafting room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the students' opportunities, the name of the department has been changed from Highway Engineering to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance of highway engineering in this state and thruout the country in general, considerable emphasis is still placed on this phase of engineering work.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and testing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects

Subjects

I. **Surveying.**—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level, and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits per week, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering, and in Agriculture.*

II. **Topographic Surveying.**—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits per week, second term. Required of Sophomores in Civil Engineering.*

III. a. **Railroad Engineering.**—The work consists of a reconnoissance, a preliminary and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates are made. A study is also made of the properties of

curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Five credits per week, divided between field and recitation as seems advisable, first term. Required of Juniors in Civil Engineering.*

III. b. **Railroad Engineering.**—The principles of economic railroad construction and maintenance; railway appliances, ballast, and roadbed, culverts and trestles, turnouts, sidings, yards, terminals, signaling, locomotive and grade problems, betterment surveys, etc. *Three recitation credits per week, second term. Required of Juniors in Civil Engineering.*

IV. **Graphic Statics.**—Instruction is given in graphic statics and its application in the design of simple framed structures. *Two recitation credits per week, first term. Required of Juniors in Civil Engineering.*

V. **Roads and Pavements.**—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction and maintenance of earth, gravel, and macadam roads, together with a discussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the construction of a gravel or macadam road on the college grounds. *Three recitation credits and one field credit per week, second term. Required of Juniors in Civil Engineering.*

VI. **Bridge Details.**—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *Two laboratory credits per week, first term. Required of Seniors in Civil Engineering.*

VII. **Bridge Analysis.**—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*

VIII. **Bridge Design.**—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits per week, second term. Required of Seniors in Civil Engineering.*

IX. **Masonry Construction.**—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and a systematic and thoro laboratory course on cement testing is given. *Two recitation credits and one laboratory credit per week, first term. Required of Seniors in Civil Engineering.*

X. **Reinforced Concrete.**—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XI. **Sewerage.**—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers;

removal of house sewage; the design and construction of sewers and method of sewage disposal. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of waterworks, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XIII. Tunneling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit per week, second term. Elective for Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XV. Assigned Work.—With the advice and consent of the head of department, the student elects three hours' work in the Senior year. This may be research, thesis, or recitation and laboratory work, depending upon the qualifications of the student. *Three credits per week, thruout the year. Required of Seniors in Civil Engineering.*

XVII. Metal Structures.—The graphical determination of stresses in steel mill buildings. *One laboratory credit per week, second term. Elective for Seniors in Civil Engineering.*

XVIII. Irrigation Engineering.—This includes a study of the impounding, diverting, flow, and measurement of water, quantity required, canals, canal works, storage reservoirs, waterways, etc. *Three recitation credits per week, first term. Elective for Seniors in Civil Engineering.*

Engineering,—Electrical

PROFESSOR DICKINSON

The aim of the course in electrical engineering is to give the student such training in the fundamental principles of the subject as will fit him to take up, in an intelligent and effective manner, any line of engineering work requiring special electrical knowledge. Instruction is given in both classroom and laboratory, the aim of each method of instruction being to supplement the other, and to develop resourcefulness and the habit of independent thought on the part of the students.

Subjects

I. Theory of Direct Currents.—A detailed study of the theory of direct-current apparatus. The theory of dynamos, motors, and auxiliary apparatus. *Three recitation credits per week, first term. Required of Juniors in Electrical Engineering and of Seniors in Chemical and Mechanical Engineering.*

II. Direct-Current Laboratory.—A series of tests of various types of direct-current apparatus. These include magnetization and characteristic curves of different types of machines, as well as tests for efficiency, regulation, temperature rise, and tests of a similar nature. *Three laboratory credits per week, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

III a. Principles of Electrical Engineering.—A subject designed to emphasize the fundamental laws of electric and magnetic circuits. Special attention is given to the units employed, and to methods of measurement. Inductance and capacity are studied at considerable length, and their effects in circuits of variable E. M. F. is discussed. *One recitation credit per week for the last nine weeks of second term. Sophomore year; and one recitation credit per week for eighteen weeks, first term, Junior year. Required of students in Electrical Engineering.*

IV. Theory of Alternating Currents.—Recitations and lectures. The elements of the theory of alternating currents and of alternating-current machinery. This subject includes the simple theories regarding the action of A. C. dynamos, motors, converters, and transformers. *Two recitation credits per week, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

V. Theory of Alternating Currents.—Recitations and lectures, continuing subject IV. The more advanced theories regarding the effect of inductance and capacity in A. C. circuits, and of the action of A. C. machinery, are discussed. Assigned readings and reports are a feature of the subject. *Three recitation credits per week, thruout the year. Required of Seniors in Electrical Engineering.*

VI. Alternating-Current Laboratory.—A series of tests of different types of alternating-current apparatus, such as single and polyphase generators and motors, induction motors, converters, and transformers. *Three laboratory credits per week, thruout the year. Required of Seniors in Electrical Engineering.*

VII. Design of Electrical Machinery.—General principles of the design of electrical apparatus, including a direct and an alternating current generator. *Three laboratory credits per week, second term. Required of Seniors in Electrical Engineering.*

VIII. Telephone Engineering.—A consideration of the development of the modern telephone, with special reference to the common battery systems. *One recitation credit per week, second term. Required of Seniors in Electrical Engineering.*

X. Transmission of Energy.—A study of systems of high-tension distribution, the effect of capacity and inductance, the construction of lines, their protection, and the troubles developing in high-tension work. *Four recitation credits per week, second term. Required of Seniors in Electrical Engineering.*

XI. Electric Railway Engineering.—A discussion of the economic considerations in the development of an electric railway, methods of construction, the location of the generating station, the design of the distributing system, types of motors, and systems of control. *Two recitation credits per week, second term. Required of Seniors in Electrical Engineering.*

XII. Assigned Work.—Members of the senior class are required to prepare and to present before the class, papers, discussions, and reports upon topics of interest to engineers. As a rule, each student presents about eight papers in the course of the year's work.

A portion of the assigned time is also devoted to research work, the amount of time so used varying with the nature of the problem, and the ability of the student profitably to utilize the time.

Three laboratory credits per week thruout the year. Required of Seniors in Electrical Engineering.

Engineering.—Mechanical

PROFESSOR WALES, MR. ELDRED, MR. MACCREADIE, .

MR. WHITEHEAD

It is the object of the work in the department of mechanical engineering to turn out broad-gauged, self-dependent men, well trained in engineering theory, familiar with the practical matters of construction and operation, and having some knowledge of the economic relations which the engineer and industrial development bear to modern society. In the endeavor to train men who will touch life, not at one point, but at many, the work of the department is supplemented and rounded out by extended and vigorous courses along the lines of electrical engineering, physics, mathematics, chemistry, English, history, modern languages, and political economy. The special work of the department of mechanical engineering divides itself naturally into the following general groups: shop practice, design, steam engineering, and experimental engineering. Each of the above groups is amplified and briefly described below:

SHOP PRACTICE

The object of this work is to give familiarity with principles, operations, possibilities, and management, rather than to develop the greatest dexterity in manipulation. Shop practice extends over two years of the course, and comprises forging and foundry work, pat-

tern making, and machine-tool operation. The shops are exceptionally well equipped with machines and tools of all kinds. In the machine shop are six metal lathes, speed lathes, planes, 16-in, shaper, two drills, two tool grinders, drill grinder, milling machine, punching-press, vertical boring and turning mill, together with the usual assortment of tools and auxiliaries. The pattern shop is provided with lathes, circular saw, band saw, jig saw, dowel machine, surface and buzz planers, etc. Fifteen work-benches fully provided with the small tools of the pattern maker complete the equipment. The forge shop is equipped with the usual anvils, forges, fullers, swages, hardies, etc., while a full stock of patterns, shovels, riddles, flasks, and trowels is provided for the work in foundry practice. Enthusiasm is given to the work by the construction of things of real value—a new machine for the shop or a piece of apparatus for the laboratory—instead of spending the whole time on worthless “exercises.”

DESIGN

The work along the lines of design extends thruout the four years, beginning with freehand and mechanical drawing and ending with machine design and power-plant design in the Senior year. Leading up to this final work are the terms of mechanical drawing, descriptive geometry, mechanism, valve gears, dynamics of machines, mechanics, strength of materials, hydraulics, and thermo-dynamics. All the forces of correct theory and the practice of the most successful builders are brought to bear upon the solution of definite, practical problems.

STEAM ENGINEERING

Steam engineering begins in the Junior year and runs thru the remainder of the course. A rigorous study of the mathematical theory of thermo-dynamics supplies the foundation for the study of boilers and engines, design and economy, and the various devices and auxiliaries of the power plant. In the Senior year is considered the particular branch of heating and ventilating. In this year, also, the subject of power plants is taken up, which applies all the previous training in steam engineering, and which brings together and unifies all allied subjects.

EXPERIMENTAL ENGINEERING

This subject, which extends thruout the Junior and Senior years, is intended to fix the theory developed in all the other lines of work. Instruction is given by means of lectures and laboratory tests. The student becomes familiar with the theory, construction, use, and calibration of the instruments and apparatus used by the engineer, and gains experience in making accurate standard and special tests. The work is divided into four groups: one dealing with the chemical problems of engineering—testing of gases, oils, fuels, feed water, etc.; a second, with general calibration and testing; a third, with the study and tests of structural materials; and the fourth, with general power-plant testing. In power-plant testing the students make the necessary plans and preparations, perform the experimental work, and prepare formal reports, with recommendations for improvement in economy, etc. These tests are made not only on the college power-plants, but on those of manufacturing establishments of the State. The equipment for experimental work comprises several boilers and steam engines, large steam pump, gas engines, feed-water heaters, several steam and gas engine indicators, steam calorimeters, tanks, scales, injectors, water turbine, hydraulic ram, pulsometer, centrifugal pump, belt pump, weirs, two-stage air compressor, air-brake outfit, meters, gauges, 50,000-lb. tension and compression machine, apparatus for oil and gas testing, fuel calorimeter, complete outfit for testing cements and concretes, etc. Thruout the work the greatest stress is laid upon the correct calculation and interpretation of results, and accuracy and self-dependence are developed to the fullest.

Subjects

I. Mechanical Drawing.—Lettering, freehand sketching, use of drafting tools, geometrical problems, projections, machine parts. *Four laboratory credits per week, first term. Required of Freshmen in Engineering.* Mr. MacCreadie.

II. Forge and Foundry.—Forging, drawing, bending, welding, etc. Principles of moulding, core making, and casting. *Two laboratory credits per week, first term. Required of Freshmen in Engineering.* Mr. Eldred.

III. Pattern Making.—Use of tools, bench and lathe work, pattern making. *Two laboratory credits per week, second term. Required of Freshmen in Engineering.* Mr. Eldred.

V. **Descriptive Geometry.**—Elementary principles; problems relating to the point, line, plane, cylinder and double curved surfaces of revolution, intersections, and developments. *One recitation and two laboratory credits per week, second term. Required of all Freshmen in Engineering.* Mr. MacCreadie.

VI. **Mechanical Drawing.**—Detail and assembly drawings, elementary machine design. *Two laboratory credits per week, first term. Required of Sophomores in Mechanical, Electrical, Civil, and Chemical Engineering.* Mr. MacCreadie.

VI a. **Mechanical Drawing.**—Continuation of Mechanical Engineering VI. *Two laboratory credits per week, second term. Required of Sophomores in Mechanical, Electrical and Civil Engineering.* Mr. MacCreadie.

VII. **Machine Shop.**—Hand work in chipping and filing, use of machine tools, construction of machines. *Three laboratory credits per week, second term. Required of Sophomores in Electrical Engineering. One and one-half laboratory credits per week, second term. Required of Sophomores in Civil Engineering.* Mr. Eldred.

VIII. **Machine Drafting.**—Technique of machine drafting, application of kinematics to the design of gears, valves, linkages, quick-return motions, etc. *Three laboratory credits per week, first term. Required of Juniors in Mechanical Engineering.* Mr. MacCreadie.

IX. **Heat Engineering.—Thermo-dynamics.**—Mathematical development and discussion of the laws of thermo-dynamics, and their application to perfect gases, saturated and superheated steam. Theory of air compressors, pneumatic machinery, hot-air engines, gas engines, and refrigerating machines. Boilers, engines, engine economy, effect of cylinder walls, compounding, superheating, use of jackets, varying cut-off, speed, pressure, etc. Flow of fluids, injectors, and thermo-dynamic principles applied to the steam turbine. *Three recitation credits per week, first term. Required of Juniors in Mechanical, Electrical and Civil Engineering, and Seniors in Chemical Engineering.* Professor Wales.

IX a. **Heat Engineering.**—Continuation of Mechanical Engineering IX. *Three recitation credits per week, second term. Required of Juniors in Mechanical and Electrical Engineering; and for nine weeks, of Seniors in Chemical Engineering.* Professor Wales.

X. **Applied Mechanics.**—Forces, composition and resolution, parallel forces, moments, couples, centres of gravity, velocity, acceleration, energy and momentum, falling bodies and projectiles, centrifugal force, moment of inertia, radius of gyration, angular momentum, energy of rotating bodies, impact, etc. Solution of practical problems. *Five recitation credits per week, first term. Required of all Juniors in Engineering.* Professor Wales.

X a. **Applied Mechanics.**—Strength of materials, stresses in structures, riveted joints, beam theory, struts, columns, shafting, springs, etc. Solution of practical problems. *Five recitation credits per week, for six weeks, second term. Required of all Juniors in Engineering.* Professor Wales.

XI. Hydraulics.—General principles, head and pressure, center of pressure, velocity of discharge, flow through orifices and over weirs, Bernouilli's theorem, flow thru pipes, flow thru conduits and canals, energy of flow, horse-power, hydraulic machinery, rams, turbines, centrifugal pumps, and Pelton wheels. Merriman's Treatise on Hydraulics. *Five recitation credits per week, for last twelve weeks of second term. Required of all Juniors in Engineering.* Professor Wales.

XII. Mechanism.—Instantaneous centers, centroids, lobed wheels, belts, pulleys, four-bar linkages, graphical determination of velocity ratios, quick return motions, straight-line motions, pantographs, trains of gears, epicyclic trains, tooth gearing, epicycloidal and involute teeth, bevel wheels, etc. Schwamb and Merrill's Mechanism. *Three recitation credits per week, second term. Required of Sophomores in Mechanical and of Seniors in Chemical Engineering.* Mr. MacCreadie

XIII. Valve Gears and Dynamics.—Plane slide valves, piston valves, riding cut-off valves; Joy and Marshall gears; Stephenson, Gooch, and Walscheart link motions; drop cut-off valves; Corliss, Brown, and Putnam valves. Peabody's Valve Gears. Lectures and references. *Three recitation credits per week, second term. Required of Juniors in Mechanical Engineering.* Mr. MacCreadie.

XIV. Machine Shop.—Advanced work in machine construction. *Three laboratory credits per week, thruout the year. Required of Juniors in Mechanical Engineering.* Mr. Eldred.

XV. Experimental Engineering a.—Lectures and laboratory work in gases, oils, and fuels; flue gas analysis, calculation of air per pound of coal, loss due to excess air and to imperfect combustion; analysis of fuel gases and calculation of heating values; determination of heating values by the Junkers and Parr calorimeters; study of gases in producer and gas-engine work. Analysis of coal and other fuels. Analysis and testing of lubricating and fuel oils. Testing of boiler waters. *One recitation and one laboratory credit, first term. Required of Juniors in Mechanical Engineering.* Professor Wales.

XVI. Experimental Engineering b.—General calibration and testing of engineering instruments and apparatus; gauges; planimeter; manometers; indicators; Prony brakes; scales; valve setting by measurement and by the indicator; Carpenter calorimeter; Peabody calorimeter; flow thru orifices; weirs; nozzles; Pitot tube; meters; Venturi meters; hydraulic ram; turbine, etc. *Two laboratory credits per week, second term. Required of Juniors in Mechanical, Electrical and Civil Engineering.* Mr. MacCreadie

XVII. Experimental Engineering c.—Properties of materials. Lectures on the metallurgy of iron and steel; effects of impurities; cold-working; repeated stresses; tensile, compressive, and shearing strengths; ductility; resilience, etc.; copper, brass, bronze and other alloys; timber, stone, and brick. The manufacture of natural and Portland cements; effects of over- and under-burning, over-liming, SO_3 , etc., discussion of tests and their interpretation. Laboratory work is parallel with lectures. Tensile strengths of

cast-iron, wrought-iron, and steel; compressive strength of metals, timber, concrete, cement; shearing tests of metals; transverse tests of timber and iron; stress-strain diagram, elastic limit, yield point, modulus of rupture; tensile tests of cement; pat tests, boiling tests; specific gravity; fineness; time of set, etc. Determination of the best proportions of cement, sand, and rock of given characters. *Two lectures and one and one half laboratory credits per week, first term. Required of Seniors in Mechanical, Electrical, and Civil Engineering.* Mr. Whitehead.

XVIII. Experimental Engineering d.—Hot-air engine, gas engine, steam pump, injectors, transmission dynamometers; boiler tests; complete tests of power plants; outside work on the H. P. of a stream, with tests of hydraulic power plant; outside tests of manufacturing plants, with calculations, reports, and recommendations. *Two laboratory credits per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XIX. Heating and Ventilation.—Discussion of the principles and practice of the various systems of heating and ventilating—direct and indirect, hot-air, hot-water, pressure steam, exhaust steam, vacuum systems, fans, blowers; calculation of ventilation and radiation; flues, pipes, and radiators; air troubles; central heating systems with central power plants; design of heating system for a given building. *One recitation credit per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XX. Machine Design.—Design of machine parts from considerations of the motions involved, strength, rigidity, and friction; design of a complete machine; calculations with design of some type of engine, starting with given requirement of H. P., speed, etc., and with an assumed theoretical indicator card. *Three laboratory credits per week thruout the year. Required of Seniors in Mechanical Engineering.* Mr. MacCreadie.

XXI. Power Plants and Power-Plant Design.—Study of the various types—as to choice, location, installation, and operation; prime movers, their accessories and auxiliaries.

Steam Plants.—Study of the effects on economy, range, and reliability of simple or compound, condensing or non-condensing engines with various valve gears, throttling and cut-off governors, different boiler installations, feed-water heaters, economizers, pressure regulators, pumps, injectors, mechanical stokers, forced and induced draft, chimneys, etc.; calculations of proper sizes, powers, and strengths of machines and apparatus of the power plant; methods of improving economy. The place of the steam turbine in power-plant work.

Hydro Plants.—Discussion of the types of hydraulic machinery, their efficiency, and the particular conditions to which each is best adapted. This will be a development of the previous work in hydraulics to meet the need of the power engineer.

Gas-Producer Plants.—The different suction and pressure producers, theory, capacity, future, etc.; gas engines, from both the thermo-dynamic and the mechanical points of view. *Two lecture credits and one laboratory credit*

per week, first term. Required of Seniors in Mechanical Engineering. Two lecture credits per week, first term. Required of Seniors in Electrical Engineering. Professor Wales.

XXII. Assigned Work.—This may be of the nature of research or of specialized study along some particular line of engineering. Options are offered in theory of elasticity, advanced hydraulics, etc. *Three credits per week, thruout the year. Required of Seniors in Mechanical Engineering.*

XXIII. Dynamics of Machines.—Analysis of stresses, effects of inertia, balance, reciprocating parts, flywheels, design of high-speed engines and machinery. *Two recitation credits per week, second term. Required of Seniors in Mechanical Engineering. Professor Wales.*

XXVI. Industrial Organization and Management.—The organization of engineering industries, and the laws and methods of business applying to them. *Three lecture credits per week, second term. Required of Seniors in Mechanical and Chemical Engineering. Professor Wales.*

English

Composition, Rhetoric, and Literature

PROFESSOR BOARDMAN, PROFESSOR CHURCHILL, MISS PECK.

The English department offers subjects in literature and in rhetoric and composition, both written and oral. The required work extends over the four years. Elective subjects in literature are provided for Juniors and Seniors. Both literature and composition subjects place emphasis on the practical and the contemporary phases of the work.

The library is an important factor in the work of the department, as it contains some twelve hundred volumes of representative English and American literature.

Subjects in Literature

PROFESSOR BOARDMAN.

IV. Modern Essays.—Study of representative essays of England and America in the 19th and 20th centuries. *Three recitation credits per week, first term. Required of all Juniors not in Reserve Officers' Training Corps.*

V. Shakspeare.—A course in appreciation, including lectures on the life of Shakspeare, reading of several plays, and careful study of three plays. *Three recitation credits per week, second term. Required of Seniors in Agriculture, Applied Science, and Home Economics.*

VI. Literature and Composition.—In kind and amount according to individual need. *Not less than two recitation credits per week, first term. Elective for Freshmen.*

VII. The English Novel.—Study of the development and technique of the novel in England. *Two recitation credits per week, second term. Elective*

as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics courses.

XI. American Poetry.—An appreciative reading study of American Poetry as a whole, using Stedman's "An American Anthology" as a basis for the work. *Two recitation credits per week, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics courses.*

Rhetoric and Composition

PROFESSOR CHURCHILL, MISS PECK.

I. Rhetoric and Composition.—Outlines of rhetorical theory, study of models illustrating the various literary forms, exercises, weekly themes. *Three recitation credits per week thruout the year. Required of Freshmen in all courses.*

II. Newspaper Work.—The technique of structure and style as applied to newspaper methods. Daily practice, special emphasis on editorial paragraph writing, based on the study of current events. *One recitation credit per week, first term. Required of Sophomores in all courses.*

III. Argumentation.—Theory and Practice. Training in the principles of brief-drawing; weekly practice in extemporaneous speaking and debating. *Two recitation credits per week, second term. Required of Sophomores in all courses.*

VIII. Interpretive Reading.—Training in the fundamental principles of pronunciation, articulation; emphasis, inflection, phrasing, quality, force, pitch, rhythm. Besides the ultimate practical purpose, this course is intended to give the necessary preparation for effective public speaking in the courses in debate and oratory during the Junior and Senior years. *One recitation credit per week, first term. Required of Sophomores in all courses.*

IX. Debating.—Instruction and practice in the art of debate. *One recitation credit per week, first term. Required of Juniors in all courses.*

X. Oratorical Writing and Extemporaneous Speaking.—Critical study of representative English and American orations as models; weekly practice in extemporaneous speaking and in the technique of oratorical writing. Criticism on the construction of one long oration. *One recitation credit per week, first term. Required of Seniors in all courses.*

Geology

MR. PERKINS

GEOLOGY.—Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to those characteristics of rocks which are of chief importance in connection with road construction.

Subjects

I. Geology.—*Two recitation credits per week, second term. Required of Juniors in Civil Engineering and Sophomores in Agriculture and Applied Science.*

History

PRESIDENT EDWARDS, PROFESSOR CHURCHILL,

I. Social, Economic, and Industrial History of the United States.—*Three recitation credits per week, second term. Required of all Juniors not in Reserve Officers' Training Corps.*

II. Government and Politics in the United States.—*Three recitation credits per week, second term. Elective.*

Home Economics

PROFESSOR CAMPBELL, MISS KNAPP.

The aim of this department is to give both theoretical and practical training in the economic administration of the home. The laboratory is situated in a building by itself, which is finished and furnished in such a manner as to demonstrate the sanitary principles involved in proper kitchen arrangements. It is amply equipped with the most recent scientific cooking-apparatus, inclusive of thermometers, metric scales, different kinds of stoves, and individual utensils. The work in chemistry, biology, etc., is, however, carried on in the laboratories of those departments. There is a good home economics library, and students are expected to make intelligent use of the main library in reference work, as well as to study those bulletins of the Department of Agriculture and such state reports as deal particularly with the subjects of food and nutrition.

I. Clothing and Textiles.—Selection of textiles with emphasis on suitability to use and economic value. Laboratory aim: an appreciation of carefully planned and finished garments. Problem constructed in laboratory: underwear and dresses. *Three laboratory credits per week, first term; and three laboratory and two recitation credits per week, second term. Required of Freshmen in Home Economics.*

III. Personal Hygiene.—This subject considers the aim of personal hygiene as the maintaining of the most efficient human machine for the life needs of the individual. It endeavors to give and establish ideals of health and efficiency. *One recitation credit per week, second term. Required of all women Freshmen.*

IV. Foods.—A systematic study is made of the food constituents, their sources, chemical composition, properties, nutritive and economic values. This subject is accompanied by laboratory practice in the preparation of many

representative foods. Class demonstrations are given from time to time. *Three recitation and three laboratory credits per week, first term; two recitation and three laboratory credits per week, second term. Required of Sophomores in Home Economics. Prerequisites: Chemistry I, II.*

VI. Human Nutrition.—Composition of the animal body and its daily food requirements; methods of investigation employed in studying the nutritive function of foods; the changes affected by cooking and by the processes of digestion; balancing of dietaries; food economy. *Three recitation credits per week, first term. Required of Juniors in Home Economics. Prerequisite: Chemistry IV, Zoölogy X, Home Economics IV.*

VII. Home Decoration.—A study of the evolution of the house; its adaptation to modern conditions; the principles to be followed in planning, furnishing and decorating the house from a sanitary and artistic standpoint. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Prerequisite: Home Economics IX.*

VIII. Dietetics.—Problems in nutritive ratios; the balanced dietary; hygienic combinations of foods; construction of menus; adaptation of the diet to age, occupation, health, and different climatic conditions. *Two recitations and one laboratory credit per week, second term. Required of Juniors in Home Economics. Prerequisite: Home Economics VI.*

IX. Sanitation.—This subject deals with household and public hygiene. Study of health and the causes of disease; vital resistance; susceptibility and immunity; infection and contagion; pollution of food and water supplies; prevention and inhibition of infection, decomposition, and decay. *Two recitation credits per week, first term. Required of Juniors in Home Economics.*

X. Food Preservation.—Practice in preserving foods by drying, salting, and sterilization; preparation of jelly, pickles, and canned fruits; discussion of commercial preservatives. *One laboratory credit per week, first term. Elective for Seniors in Home Economics. Prerequisite: Home Economics IX.*

XI. Hygiene and Care of Children.—A study of the physical development of children; care of infants and young children; school hygiene. *Two recitation credits per week, first term. Required of Seniors in Home Economics. Prerequisite: General Psychology. Open to Juniors and Seniors in other courses.*

XII. Home Nursing.—Care of the sickroom and patient; administration of medicines; recording of symptoms; accidents and emergencies; hygiene of infectious diseases. *One recitation credit per week, second term. Required of Seniors in Home Economics. Prerequisite: Home Economics IX.*

XIV. Assigned Work.—This may be a problem in the biological, chemical, physiological, or economic aspect of the work in Home Economics. *Three recitation and two laboratory credits per week, second term. Required of Seniors in Home Economics.*

XV. Teaching of Home Economics.—Purpose and method of the work; courses of study, equipment, etc. *One recitation credit per week, second term. Elective for Seniors in Home Economics.*

XVI. History of Home Economics.—Development of home economics movement; a study of the work as presented in different types of institutions, and its industrial, educational, and sociologic aspects. *One recitation credit per week, first term. Elective.*

XVIII. Dressmaking and Tailoring.—*Three laboratory credits per week, first term. Elective for students who have completed Home Economics I.*

XX. A Study of the Family.—Development of the domestic institutions; social ethics of the family; legal, industrial, and educational problems of the household. *Two recitation credits per week, second term. Prerequisite: Home Economics V. Elective.*

XXI. Home Administration.—This subject includes the care of the home, the planning, buying, preparation and serving of menus suitable for various occasions, methods of simplification of home duties, division of income, and keeping of household accounts. *One recitation and two laboratory credits per week, first term. Prerequisite: Home Economics VIII. Required of Seniors in Home Economics.*

XXII. Millinery.—Designing and constructing different kinds of frames; covering, finishing, and trimming; making over a hat from renovated materials. *Two laboratory credits per week, first term. Elective for Juniors and Seniors in Home Economics.*

XXIII. Textiles.—Development of textile industry; modern methods of spinning and weaving. The properties, values, manufacture and finishing of cotton, linen, silk, and wool. Emphasis upon the identification of textile materials as to price, width, and weave. *Two recitation credits per week. Elective for Juniors and Seniors in Home Economics.*

HORTICULTURE

MR. CORRIVEAU, MR. GODIN.

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the horticultural building. The main building contains the office and recitation rooms, together with photographic rooms. Attached to this building are greenhouses of modern construction, containing over 8,000 square feet under glass, 3,000 square feet of which is used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords the student an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens, and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity for the study of apples and pears especially.

A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects

I. **Propagation of Plants.**—Different methods, including seed testing. Soft, green, and hardwood cuttings. Layering, grafting, and budding. *One recitation and one laboratory credit per week, first term. Required of Freshmen in Agriculture and option for Juniors in Applied Science.*

II. **Vegetable Gardening.**—Underlying principles and types of vegetable gardening; study of individual crops; text-book work. *Two recitation credits per week, second term. Required of Freshmen in Agriculture. Option for Seniors in Applied Science.*

III. **Fruit Culture.**—Fundamental principles of orcharding; soil, fertilizer, and cultivation. Methods of laying out orchards and planting. Tillage, pruning and spraying. Harvesting and storing fruits. Collateral reading and practical work. *Two recitation credits per week, first term. Required of Juniors in Agriculture.*

IV. **Spraying and Pruning.**—Preparation and application of spray mixtures; insecticides and fungicides. Methods of application for different orchard enemies, and machinery used. Pruning of trees and ornamental shrubs. *One recitation and one laboratory credit per week, second term. Required of Freshmen in Agriculture. Option for Juniors in Applied Science.*

V. **Greenhouse Construction and Management.**—Study of the different types of glasshouse structures; methods of heating and ventilating. *One recitation and two laboratory credits per week, second term. Option for Juniors in Agriculture.*

VIa. **Floriculture.**—History of floriculture. Study of greenhouse plants, collectively and individually; practical work in propagation, potting, watering, ventilating, fumigating, and spraying. Study of bulbs, bedding plants, palms and ferns. *One recitation and two laboratory credits per week, entire year. Option for Seniors in Agriculture. Prerequisite: Horticulture V.*

VII. **Horticulture By-Products.**—Principles of canning and preserving fruits, manufacture of fruit juices and butters, cider, vinegar, evaporated fruits, pickles, sauces, jams and jellies. The aim of this course is to equip the student with a knowledge of the means of converting surplus and low grade horticultural products into salable manufactured goods so as to make profits where losses might otherwise occur. *Two recitation credits per week, first term. Elective for Seniors in Agriculture. Prerequisite Hort. III or Hort. XVII.*

VIII. **Literature of Horticulture.**—See Agronomy IX.

IX. **Assigned Work.**—Special subjects chosen by the student. *Option for Seniors in Agriculture. Hours to be arranged.*

X. Pomology.—Orchard and bush fruits. Study of types; origin, and history; classification, description, and methods of handling. Orchard management. *One recitation credit and two laboratory credits per week, throughout the year. Option for Seniors in Agriculture and Applied Science. Prerequisite: Horticulture III.*

XI. Advanced Vegetable Gardening.—Study of one or more crops selected by student. Practical work, research work, and text-book. *One recitation credit and two laboratory credits per week, second term. Elective for Seniors in Agriculture.*

XII. Plant Breeding.—See Agronomy XI.

XVI. Landscape Gardening.—This subject is designed for students in general and consists of the rules and principles governing landscape gardening, the design and laying out of grounds for farm, village, and city places, making of lawns, flower beds, etc. *One recitation and two laboratory credits per week, first term. Required of Juniors in Agriculture. Prerequisite: Horticulture XIV.*

XVII. Small Fruits and Grapes.—The strawberry, raspberry, blackberry, dewberry, currant, gooseberry, grape. History; extent of cultivation; and management in home and commercial plantations. *Two recitation and one laboratory credit per week, second term. Given in alternate years, 1918, 1920. Option for Juniors and Seniors in Agriculture.*

A. Vegetable Gardening.—Fundamental principles of vegetable growing. Practical work in cold frames, hotbeds, and garden planing. *Three recitation credits and one and one-half laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year.*

B. Fruit Culture.—Study of fruits; propagation; planning fruit gardens and plantations; harvesting and packing; care. *Three recitation credits and one laboratory credit per week, first term. Required of Short-Course students in Agriculture, second year.*

E. Spraying and Pruning.—A study of the methods used in combating insect pests and plant diseases. Preparation and application of fungicides and insecticides. Study of nozzles, pumps, etc. *Two recitations and one and one-half laboratory credits per week, second term. Required of Short-Course students in Agriculture, second year.*

F. Home Grounds.—A study of the materials to use, the essential principles of the art. Practice in designing, planting, and care of home grounds. *Three recitation credits per week, second term. Required of Short-Course students in Agriculture, second year.*

G. Propagation of Plants.—A study of the different methods of plant propagation. *One laboratory credit per week, first term, second year. Required of Short-Course students in Agriculture.*

Languages, Modern

MISS MYRICK, MISS PECK, MR. PLA.

FRENCH

I. **Elementary French.**—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits per week, thruout the year.*

II. **Reading of intermediate texts.**—Composition, conversation, first term; Scientific French, second term. *Three recitation credits per week, thruout the year.*

III. **Scientific and Classical French.**—*Three recitation credits per week thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. **Advanced Scientific French.**—*Three recitation credits per week, thruout the year. Elective for students who have completed II and III.*

GERMAN

I. **Elementary German.**—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits per week, thruout the year. Required of students in Applied Science when German is not offered for entrance.*

II. **Scientific German.**—*Five recitation credits per week, second term. Required of Sophomores in Applied Science, Home Economics, and Chemical Engineering.*

III. **Scientific German.**—*Three recitation credits per week, thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. **Advanced Scientific German.**—*Three recitation credits per week, thruout the year. Elective for students who have completed II and III.*

SPANISH

I. **Elementary Spanish.**—Grammar; pronunciation; reading; composition; conversation. *Three recitation credits per week, thruout the year.*

II. **Modern Prose.**—Conversation; composition; reading of modern prose with practical vocabulary. Commercial correspondence. *Three recitation credits per week, thruout the year.*

III. **Commercial Spanish.**—Reading of fac-simile business correspondence; writing of business letters; conversation. Reports in Spanish on commercial subjects and trade development. (Conducted in Spanish). *Three recitation credits per week, thruout the year.*

Mathematics

PROFESSOR TYLER, MR. BILLS

Subjects

I. **College Algebra.**—*Five recitation credits per week, nine weeks, first term. Required of Freshmen in Engineering and Applied Science. Professor Tyler, Mr. Bills.*

II. **Trigonometry.**—*Five recitation credits per week, nine weeks, first term. Required of all Freshmen. Professor Tyler, Mr. Bills.*

III. **Higher Algebra.**—*Five recitation credits per week, nine weeks, first term. Required of Freshmen in Agriculture and Home Economics. Mr. Bills.*

VIII. a. **Trigonometry completed and Analytics.**—*Five recitation credits per week, second term. Required of Freshmen in Engineering. Professor Tyler, Mr. Bills.*

VIII. b. **Trigonometry completed and Elementary Analysis.**—*Four recitation credits per week, second term. Required of Freshmen in Applied Science. Mr. Bills.*

X. **Calculus.**—*Five recitation credits per week, first term. Required of Sophomores in Engineering. Professor Tyler.*

XI. **Calculus (completed).**—*Five recitation credits per week, second term. Required of Sophomores in Engineering. Professor Tyler.*

XIV. **Spherical Trigonometry.**—*One recitation credit, first term. Elective as an extra.*

XV. **Solid Analytics.**—*One recitation credit, second term. Elective as an extra.*

Military Science and Tactics

CAPTAIN DOVE

All male college students are required to take military instruction during the first two years unless excused by reason of physical disability. During this period they are enrolled in the Reserve Officers' Training Corps. During the remainder of their period in college they may continue in the military department or take physical training instead.

Under an Act of Congress approved June 3, 1916, units of the Reserve Officers' Training Corps may be established at civil educational institutions, with the primary object of qualifying, by systematic and standard methods of training, young men for reserve officers of the United States Army.

The system of instruction as prescribed presents to the students a standardized measure of that military training which is necessary in order to prepare them to perform intelligently the duties of commis-

sioned officers in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers.

Under the provisions of the National Defense Act of June 3, 1916, as published in General Orders No. 49, War Department, 1916, any student who has completed two academic years of service in the Reserve Officers' Training Corps, and has been selected for further training by the president of the institution and by its professor of military science and tactics, and who has agreed in writing to continue in said Corps for the remainder of his period in college, devoting five hours per week to the prescribed military training, and who further agrees to take the prescribed camp training, may be furnished with an allowance for subsistence amounting to about \$85 per year.

When a unit of the Reserve Officers' Training Corps has been established at an institution, the Quartermaster's Corps of the Army will issue or provide one complete olive drab regulation uniform for each student undergoing instruction. It is also the policy of the War Department to issue for each unit of the R. O. T. C. the latest model rifle and equipment, in so far as the supply and the appropriations of Congress permit.

The War Department has ruled that the prescribed courses in camp training shall consist of two camps of four weeks each, one at the end of the junior year and the other subsequent to graduation. As at present scheduled, these camps are to be held at Plattsburg, N. Y., during the summer.

Any member of the Reserve Officers' Training Corps who has attended one or more such camps during the first two years of his service in the corps may be given credit therefor.

Subsistence while in camp, and railroad fare to and return will be paid by the United States. Extra articles of uniform necessary for camp will also be furnished.

Upon the completion of all required work in connection with the Reserve Officers' Training Corps graduates will be commissioned as reserve second lieutenants of the Army.

In order to provide for additional training of reserve officers the National Defense Act contained the following paragraph: "Sec. 52. The President alone is hereby authorized to appoint and commission as a temporary second lieutenant of the Regular Army in time of

peace for purposes of instruction, for a period not exceeding six months, with the allowances now provided by law for that grade, but with pay at the rate of \$100 per month, any reserve officer appointed pursuant to sections forty-nine and fifty-one of this act, and to attach him to a unit of the Regular Army for duty and training during the period covered by his appointment as such temporary second lieutenant, and upon the expiration of such service with the Regular Army such officer shall revert to his status as a reserve officer."

It should be noted, however, that this six months' service is optional and not compulsory, and further that there is no obligation on any student beyond the prescribed military training in college and the two summer camps.

In case a graduate wishes to take the six months training in the Regular Army, as mentioned above, immediately upon finishing his collegiate course, the second camp period may be included in the six months.

Any further information in regard to the provisions of the Reserve Officers Training Corps may be obtained from the president or the professor of military science and tactics.

The prescribed uniform must be worn at all practical exercises.

Subjects

I. Military Art.—Practical.—(a) *First Year* Physical drill; Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad, Company, and Battalion close and extended order; preliminary instruction in sighting and aiming drills; gallery practice; nomenclature and care of rifle and equipment; ceremonies; manuals; bayonet combat; intrenchments; first-aid instruction; target practice. (b) *Second Year*. Same as (a), combat and collective firing in indoor ranges if possible; signaling; work with sand table. (c) *Third Year*. Duties consistent with rank as cadet officers or non-commissioned officers in connection with (a) and (b); military sketching. (d) *Fourth Year*. Same as (c). *Two exercises of one hour each per week, counting as one credit thruout the year. Required of all male Freshmen and Sophomores, and all Juniors and Seniors taking the advanced course in the Reserve Officers' Training Corps.*

II. Military Art.—Theoretical.—*First Year*. Theory of target practice; military organization; service of information; service of security; map reading; lectures on general military policy as shown by military history of the United States and military obligation of citizenship; combat (to be illustrated by small tactical exercises); Infantry Drill Regulations, to include School of the Company; camp sanitation for small commands; personal hygiene. *One recitation credit per week thruout the year. Required of all Freshmen,*

IV. Military Art.—Theoretical.—*Second Year.* Infantry Drill Regulations, to include School of Battalion and Combat; Small Arms Firing Regulations; lectures as in II; map reading; marches and camps; camp sanitation and camp expedients; military history (recent); service of security and information (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping). *One recitation credit per week thruout the year. Required of all Sophomores.*

V. Military Art.—Theoretical.—*Third Year.* Minor tactics; field orders; map maneuvers and problems; company administration (papers and returns); property accountability; method of obtaining supplies and equipment; military history; elements of international law. *Three recitation credits per week thruout the year. Required of all Juniors in the Reserve Officers' Training Corps.*

VI. Military Art.—Theoretical.—*Fourth Year.* Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings; international relations of America; gradual growth of the principles of international law embodied in American diplomacy, legislation, and treaties; psychology of war; general principles of strategy only, planned to show the intimate relationship between the statesman and the soldier; military history and policy; the rifle in war. *Three recitation credits per week thruout the year. Required of all Seniors in the Reserve Officers' Training Corps.*

Physics

PROFESSOR DICKINSON, ASSISTANT PROFESSOR COGGINS

Physics is regarded as a fundamental science, a mastery of which is essential to success in engineering or in any calling involving the application of scientific methods and processes. Therefore emphasis is placed upon the practical applications of the principles involved, not only for the purpose of affording preparation for future work, but with the idea of stimulating the student to an interest in his professional work.

At the same time, some effort is made to present the subject from the standpoint of a pure science, and to instill in the student a respect for scientific methods, and to prepare him for advanced work in research and investigation. Advanced mathematics is employed, wherever its use is deemed necessary for a rigorous and complete development of the subject.

Instruction is given in both class-room and laboratory, the two methods being closely correlated. The department is well equipped with high grade apparatus, much of which has been recently imported. In mechanics, special attention is given to problems involved in the application and transmission of power.

In the laboratory of heat measurements, the problems involved in the transformation of heat into useful energy, are strongly emphasized.

In light, the department is able to carry on work of the usual college grade, being well equipped with high grade photometers, spectrometers, interferometers, and refractometers.

The laboratory of electrical measurements is particularly well equipped for the carrying on of advanced work.

Subjects

I. **Descriptive Physics.**—Designed for students in Agriculture and Home Economics. The subject furnishes an excellent foundation for further work in physics. *Five recitation credits per week, second term. Required of Sophomores in Agriculture and Home Economics.*

II. **General Physics.**—A mathematical treatment of the subject, in which a knowledge of elementary physics is presupposed. *Four recitation credits per week, thruout the year. Required of all Sophomores in Engineering and Applied Science.*

III. **Laboratory Physics.**—A series of physical measurements intended to teach students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits per week, thruout the year. Required of Sophomores in Engineering and Applied Science.*

V. **Electrical Measurements.**—Direct-current measurements, resistance, potential, current, magnetic properties of iron and steel, calibration of direct-current instruments. *One and one-half laboratory credits per week, first term. Required of Juniors in Electrical Engineering.*

VI. **Principles of Illumination.**—A study of different sources of light, photometrical measurements, and the principles of illuminating engineering. *One recitation credit and one and one-half laboratory credits per week, first term. Required of Juniors in Electrical Engineering.*

Physical Training

MISS BAILEY

All women students are required to attend the gymnasium exercises. These are designed to improve the general health of the young women and to train them in agility, poise, and general gracefulness, and to develop alertness and a ready response to any order or request. The exercises are confined to the lighter work of a gymnasium because of a lack of other equipment.

I. **Marching;** free arm exercises; wand and dumb-bell exercises; Indian club swinging. *One laboratory credit per week, thruout the year. Required of all women students.*

Psychology and Education

PROFESSOR BOARDMAN.

The subjects in education provide instruction in school law and management, in theory as derived from general and educational psychology, and in the principles and history of education. As a part of the work visits are made to neighboring elementary and secondary schools for the purpose of observing the technique of the recitation with special reference to the courses in science.

Subjects

I. History of Education.—Study of educational theory and practice from the historical point of view, with reference to modern scientific and industrial education. *Three recitation credits per week, second term. Required in Applied Science; Elective in Home Economics and Agriculture. Next given in 1917-1918.*

II. Principles of Education, School Law and Administration.—Study of the principles and methods of teaching and administration, and of Rhode Island school law. *Three recitation credits per week, second term. Required in Applied Science; Elective in Home Economics and Agriculture. Next given in 1918-1919.*

III. Secondary Education.—Principles of teaching, with special reference to the aims of the secondary schools, organization, management, and method in the high school. *Three recitation credits per week, second term. Required in Applied Science; Elective in Home Economics and Agriculture. Next given in 1918-1919.*

IV. General Psychology.—Structure and functions of mental life; simple experiments. *Three recitation credits per week, first term. Required in Applied Science and Home Economics; Elective in Agriculture. Next given in 1917-1918.*

VIII. How to Study.—A practical course, based on psychological principles, designed to increase the efficiency of students. *One recitation credit per week, first nine weeks of the first term. Required of all Freshmen.*

Zoölogy

PROFESSOR BARLOW

The work in this department is designed to meet the needs of two classes of students, those who are interested in the economic aspect of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic importance of the different orders. Much time is allotted to entomology, and in this subject special attention is given to injurious species. For those who are

to be teachers, a thoro training is given in the morphology and classification of animals as a preparation for the more special subjects that follow. In these attention is directed to the habits and relations of animals, which are studied both in the field and laboratory.

The laboratory is equipped with a series of charts, valuable models, and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about one hundred cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes. The necessary instruments for laboratory work can be procured at small cost at the college store.

Subjects

I. Invertebrate Zoölogy.—A course in the morphology and classification of unvertebrates. *One recitation and three laboratory credits, second term. Option for Juniors and Seniors in Applied Science.*

II. General Zoölogy.—Lectures and field work on the distribution and habits of animals. Special studies of local areas and typical animal communities. *One lecture credit and one and one-half laboratory credits, second term. Option for Seniors in Applied Science.*

IV. Economic Entomology.—*One laboratory credit and three recitation credits, second term. Option for Juniors in Agriculture and Applied Science.*

V. General Entomology.—*Two laboratory credits and one recitation credit, first term; two laboratory and two recitation credits, second term. Option for Seniors in Applied Science.*

VI. Systematic Entomology.—*Three or five laboratory credits per week thruout the year. Elective for those who have taken or are taking Zoology V.*

IX. Bird Life.—Field study of native birds. *One and one-half laboratory credits; second term. Elective.*

X. Vertebrate Zoölogy.—Structure and physiology of vertebrates. *Two recitation credits and two laboratory credits thruout the year. Required of Sophomores in Agriculture, Home Economics, and Applied Science.*

A. Elementary Economic Zoölogy.—Injurious insects are chiefly studied. *Two recitation credits thruout the year, Short Course in Agriculture.*

Student Organizations

Agricultural Club

HENRY A. BARTELS	President
LESLIE A. KEEGAN	Vice-President
ASHBEL RUSSELL WELLES	Treasurer
PAUL D. BARNARD	Secretary

Debating Society.

WAYLAND M. BURGESS	President
CHARLES D. DALZELL	Vice-President
CARL E. FRITZ	Secretary
JAMES R. WALSH	Treasurer

Glee Club

HERBERT A. WISEBY	Manager
NELSON E. BLAKE	Leader

Student Council

RAYMOND D. TAYLOR.....	President
LESLIE L. DUNHAM	Vice-President
DANIEL J. LYNCH, JR.....	Secretary

Young Men's Christian Association

HAROLD K. WILDER	President
JAMES HUGH WILLIAMSON	Treasurer
ASHBEL R. WELLES	Secretary

Campus Club

LESTER L. SMITH	President
WILLIAM E. GILLIS.....	Vice-President
ALBERT STONE	Secretary
GEORGE E. ADAMS	Treasurer

Chemical Society

HAROLD K. WILDER	President
NELSON E. BLAKE	Vice-President
RAMON A. PLA	Secretary

Lecture Association

RAYMOND D. TAYLOR	President
HENRY BARTON, JR.	Vice-President
LESTER W. BOARDMAN	Secretary-Treasurer

The Beacon

WILLIAM ELLIS GILLIS	Editor-in-Chief
JAMES HUGH WILLIAMSON	Managing Editor
JAMES FRANCIS PYNE	Manager

Dramatic Club

SPRAGUE S. BAKER	President
IRMA R. EDMISTON	Vice-President
MILDRED EDWARDS	Secretary
HAROLD B. SMITH	Treasurer

Menorah Society

SOLOMON FINE	President
ABRAHAM THOMAS	Vice-President
MANUEL S. BLOOM	Secretary
SAMUEL H. COHEN	Treasurer

Young Women's Christian Union

RUTH W. CHANDLER	President
FLORENCE SHIPPEE	Treasurer
RUTH MURRAY	Secretary

Women's Athletic Association

E. HOPE BROWNE	President
SARA E. COYNE	Vice-President
DOROTHY E. HASKELL	Treasurer
PRISCILLA D. SMITH	Secretary

Alumni Association

RANDOLPH H. CARPENTER, 1910	President
WILLIAM H. WEBB, 1914	Vice-President
HOWLAND BURDICK, 1895	Secretary-Treasurer
ALBERT C. HUNTER, 1915 }	Executive Committee
EDITH C. KEEFER, 1903 }	

Athletic Association

J. M. MALLOY	President
H. K. WILDER	Vice-President
C. E. MASON	Secretary

BATTALION ORGANIZATION, 1916-1917

Four Companies of Infantry and Band

COMMANDANT

WILBUR E. DOVE, Captain United States Army, Retired

Cadet Officers

Major	JAMES A. CLARK
Captain	DONALD A. KENDALL
Captain	ASHBEL R. WELLES
Captain	DAVID A. REDFORD
Captain	AUBREY H. THAYER
First Lieutenant and Adjutant.....	JAMES A. MURPHY
First Lieutenant	JAMES H. WILLIAMSON
First Lieutenant	RAYMOND D. TAYLOR
First Lieutenant	ALBERT A. LEBOEUF
First Lieutenant	SAMUEL E. LAWRENCE
Second Lieutenant	FRANK E. GREENHALGH
Second Lieutenant	HERBERT A. WISBEY
Second Lieutenant	ABRAHAM S. LAHN
Second Lieutenant	GEORGE A. FEARN
Second Lieutenant	LESLIE L. DUNHAM
Band Leader	THEOSE E. TILLINGHAST

RESERVE OFFICERS' TRAINING CORPS

Advanced Course.

Seniors

James A. Clark	Ernest E. Redfern
Harry Cohen	Kenneth M. Slocum
Leslie L. Dunham	Raymond D. Taylor
Donald A. Kendall	Theose E. Tillinghast
Abraham S. Lahn	Ashbel R. Welles
James A. Murphy	James H. Williamson

Juniors

Richard P. Ash	Numan H. Martell
Henry Barton, Jr.	Charles E. Mason
Nelson E. Blake	Arthur H. F. Meyer
Melvin H. Brightman	James A. Mitchell
Donald E. Carlton	Harold Q. Moore
John J. Condon	Chester A. Olsen
John W. Cruickshank	Henry I. Riley
John L. Daneker	Frederick C. T. Slauson
Walter B. Davis	Raymond A. Spargo
William Dawson	Franklin H. Springer
Rowland S. Dodge	Milton Torgan
George H. Fleck	Frederick E. Walker
Lester D. Groves	Harold K. Wilder
George E. Luther	David L. Wood
Daniel J. Lynch	

PRIZES AND HONORS

PHI KAPPA PHI

In the spring of 1913 was organized at the Rhode Island State College a chapter of Phi Kappa Phi, a national scholarship society, whose purpose, as stated in the preamble of the constitution is "to provide a Fraternity, dedicated to the Unity and Democracy of Education, and open to honor graduates of all departments of American Universities and Colleges."

The national society was founded at the University of Maine, in 1897. Since then, the number of chapters has increased to fourteen, in the following states, respectively: Alabama, Delaware, Florida, Georgia, Iowa, Kansas, Maine, Massachusetts, Nebraska, Nevada, North Dakota, Pennsylvania, Rhode Island, Tennessee. The total membership is 2261.

Since the organization of the local chapter in 1913, from Faculty, Alumni and Seniors the following have been elected to membership, and this number will be added to from year to year by the selection of honor students who become eligible in successive senior classes:

CHARTER MEMBERS

Burt L. Hartwell	Herman Churchill
Virgil L. Leighton	Samuel H. Webster
Royal L. Wales	John Barlow

FACULTY MEMBERS SUBSEQUENTLY ELECTED

Howard Edwards	Lester W. Boardman
Philip B. Hadley	Alta M. Bailey
Philip H. Wessels	Leonard P. Dickinson

ALUMNI MEMBERS

George E. Adams	Arthur A. Denico
George A. Rodman	Latham Clarke
George M. Tucker	Kate Grace Barber
A. C. Scott	Warren Goddard, Jr.
Howland Burdick	Edith Cecilia Keefer
H. E. B. Case	Walter S. Rodman
W. C. Clark	Jean Gilman
Blydon E. Kenyon	Nellie A. Harrall

Marion G. Elkins	Ralph I. Alexander
John K. Lamond	James H. Aldred
Harry R. Lewis	Harold W. Browning
Clesson H. Field	Lorenzo F. Kinney, Jr.
Herbert A. Fiske	Helen W. Ford
Rhobie L. Cargill	Norman H. Borden
Paul S. Burgess	Wesley C. Miller
David E. Worrall	Robert W. Belfit
Henry N. Barlow	Leroy A. Whittaker
Walter Doll	Charles E. Seifert
Allae C. Slater	Solomon Fine
Marguerite W. Elkins	Henry H. Broadfoot
Dorothy D. Elkins	

THE KINGSTON PRIZES

The sum of sixty dollars offered by a friend of the college to encourage literary work among the students, was divided in 1916 into three portions, providing a first prize of thirty-five dollars, a second of fifteen dollars, and a third of ten dollars, for the best essays submitted in a contest held on June 6, 1916. The awards were as follows:

FIRST PRIZE:

ESSAY—"The Opportunity for the Civil Engineer in South America." Ralph Earle Glasheen.

SECOND PRIZE:

ESSAY—"Animal Experimentation and Its Benefits to Mankind." Henry Edmund Medbery.

THIRD PRIZE:

ESSAY—"The Nitrogen Problem and How It Can Be Solved." Carl David Roun.

THE BURCHARD CUP

In 1912 the Honorable Roswell B. Burchard presented to the college a handsome silver cup to be used as a fraternity scholarship trophy. Each year the fraternity or other organized group of students whose average scholarship grade stands highest, wins the

honor of having its name inscribed on the cup. When any fraternity has achieved this distinction for three consecutive years, it thereby secures permanent ownership of the cup. In 1914 and in 1915 Beta Phi won the honors, and in 1916 Lambda Chi Alpha.

Honors awarded Commencement Day, June 15, 1916:

FINAL HONORS FOR COURSE:

Charles Edward Seifert, Solomon Finè, Homer Ransom Rowell, Emilie May Curran, Dean Blenus Fraser.

SENIOR HONORS.

Thomas Francis Victory
Charles Edward Seifert
Ralph Earle Glasheen
Charles Irving Milnes
Solomon Fine
Dorothy Isabelle Burr
Etta Elizabeth Meeers
Phineas Munsell Randall

JUNIOR HONORS

John Gordon Anderson
Henry Arthur Bartels
Henry Harrington Broadfoot
Samuel Lyman Rodman

SOPHOMORE HONORS.

Harold Kenneth Wilder
Charles Everett Mason
Hannah Amelia Stillman
Nelson Everett Blake
Lester Earl Wells
Dorothy Isabelle Haskell
Joseph Wansker
Charles Elwyn Lermond

FRESHMAN HONORS.

Marie Miller
Thurston Waldemar Peterson
Wayland McColley Burgess
Daniel Olney Cargill
Leander Burnside Spencer
David Hood Livingston
Priscilla DaCosta Smith

Degrees Conferred in 1916

Bachelor of Science

Daniel Gaskill Aldrich
William Joseph Becker, Jr.
Dorothy Isabelle Burr
Everett Augustus Carleton
Ambrose Royle Chantler
Clarence John Conyers
Gilbert Ralph Cordin
Emilie May Curran
Henry Fales Daniels
Frank Aloysius Faron

Ernest George Field
Solomon Fine
Dean Blenus Fraser
Thomas William Freeman
Ralph Earle Glasheen
William Frank Hanlin
James Murray Henry
Leonard Stanley Holley
Annie Sarah Hoxsie
Henry Clinton Kelly

Seth Frederick Hadley Lagerstedt	Clarence Howard Parker
William Emanuel Lewis	Milton Harris Price
Lester William Lloyd	Bertha Adelaide Randall
George Emile Lussier	Phineas Munsell Randall
Leander Wallace McLeod	Homer Ransom Rowell
Henry Edmund Medbery	Charles Edward Seifert
Etta Elizabeth Meeers	Carleton Webb Short
Charles Irving Milnes	Thomas Francis Victory
Theodore Andrew Palmer	Earl Walmsley
	Vincent Case Young

Master of Agriculture

George Edward Adams	Harry Reynolds Lewis
Albert Edmund Wilkinson	

STUDENTS

Graduates

Burgess, Martha Marietta (B. A., Brown Univ., 1916).....	North Scituate
Fine, Solomon (B. S., R. I. S. C., 1916).....	Kingston
Hawkins, Myron Angell (B. S., R. I. S. C., 1914).....	Kingston
Howard, Lewis Philip (B. Sc., Mass. Agri. Coll., 1912).....	Kingston
Merkle, George Edward (B. Sc., Mass. Agr. Coll., 1912).....	Kingston
Spencer, George Edward (B. Sc., Syracuse Univ., 1914).....	Kingston

Seniors

Ames, Arnold Willard, Mech. Eng.....	Westerly
Anderson, John Gordon, Appl. Sci.....	Westerly
Anthony, Harold Congdon, Agr.....	Newport
Bartels, Henry Arthur, Agr.....	New York, N. Y.
Broadfoot, Henry Harrington, Chem. Eng.....	Westerly
Browne, Elizabeth Hope, Home Econ.....	Pawtucket
Clark, James Andrew, Chem. Eng.....	Providence
Cohen, Harry, Elec. Eng.....	Brockton, Mass.
Dunham, Leslie Lincoln, Agr.....	Brockton, Mass.
Easterbrooks, Wilfred Ross, Civ. Eng.....	Wakefield
Ebbs, Robert Allen, Chem. Eng.....	Newport
Flynn, William Augustus, Civ. Eng.....	Providence
Goddard, Franklin Perry, Elec. Eng.....	Newport
Harry, Charles Edward, Agr.....	East Providence
Hawkins, Clinton Dexter, Chem. Eng.....	Pawtucket
Hill, Edwin Douglas, Agr.....	Providence
Johnson, Charles Varnum, Civ. Eng.	Wickford
Kendall, Donald John, Agr.....	Brockton, Mass.
Lahn, Abraham Samuel, Civ. Eng.....	Westerly
Lawrence, Samuel Eugene, Appl. Sci.....	New London, Conn.
LeBoeuf, Albert Alphonse, Appl. Sci.....	Fall River, Mass.
McIntosh, Albert Edward, Civ. Eng.....	Providence
Murphy, James Aloysius, Chem. Eng.....	Woonsocket
Pyne, Francis James, Civ. Eng.....	Brockton, Mass.
Redfern, Ernest Elmer, Chem. Eng.....	Woonsocket
Redford, David Adam, Mech. Eng.....	Pawtucket
Rieckel, Grace Lillian, Home Econ.....	Providence

Rodman, Samuel Lyman, Agr.....	Gould
Slocum, Kenneth Matteson, Civ. Eng.....	Central Falls
Smith, Harold Burlen, Appl. Sci.....	Brockton, Mass.
Taylor, Raymond Douglas, Agr.....	Westerly
Tew, Joseph Gardiner, Appl. Sci.....	Phoenix
Thayer, Aubrey Harvey, Elec. Eng.....	Nasonville
Tillinghast, Theose Elwin, Mech. Eng.....	Westerly
Wansker, Harry Abe, Civ. Eng.....	South Boston, Mass.
Welles, Ashbel Russell, Agr.....	Wethersfield, Conn.
Williamson, James Hugh, Civ. Eng.....	Newport
Wisbey, Herbert Andrew, Agr.....	Rumford

Juniors

Ash, Richard Palmer, Elec. Eng.....	Bridgewater, Mass.
Barton, Henry, Jr., Civ. Eng.....	Bristol
Blake, Nelson Everett, Chem. Eng.....	Wallingford, Conn.
Brightman, Melvin Hazard, Agr.....	Edgewood
Call, Roy Porter, Appl. Sci.....	Lynn, Mass.
Cameron, Lorne Atwood, Agr.....	Mattapan, Mass.
Carlton, Donald Elsworth, Agr.....	East Providence
Chandler, Ruth Westlake, Home Econ.....	Providence
Condon, John Jerome, Chem. Eng.....	Bristol
Coyne, Sarah Elizabeth, Home Econ.....	Providence
Cruikshank, John William, Civ. Eng.....	Providence
Dalzell, Charles Davies, Agr.....	Wakefield, Mass.
Davis, Walter Brighton, Chem. Eng.....	Middletown, Conn.
Dawson, William, Civ. Eng.....	Harrisville
DeMay, Wilfred West, Civ. Eng.....	Wethersfield, Conn.
Devine, James Joseph, Mech. Eng.....	Bridgewater, Mass.
Dodge, Rowland Sever, Agr.....	Pawtucket
Edmiston, Irma Rathbun, Home Econ.....	East Greenwich
Fairbanks, George Henry, Elec. Eng.....	Central Falls
Fearn, George Andrew, Appl. Sci.....	Pawtucket
Fleck, George Howard, Elec. Eng.....	Providence
Gibbs, Ralph William, Elec. Eng.....	West Barrington
Gillis, William Ellis, Appli. Sci.....	East Providence
Greenhalgh, Frank Elmer, Civ. Eng.....	Chepachet
Groves, Lester Davis, Agr.....	Hope
Haggarty, Charles William, Elec. Eng.....	Allenton
Haskell, Dorothy Estelle, Home Econ.....	West Barrington

Keegan, Leslie Arthur, Agr.....	Providence
Kinney, Esther Lee, Home Econ.....	Kingston
Lermond, Charles Elwyn, Elec. Eng.....	East Providence
Lynch, Daniel Joseph, Mech. Eng.....	Brockton, Mass.
Malloy, George Joseph, Mech. Eng.....	North Easton, Mass.
Martell, Numan Allen, Elec. Eng.....	North Attleboro, Mass.
Mason, Charles Everett, Agr.....	Bristol
Mayer, Albert Rosaire, Elec. Eng.....	Providence
Meyer, Arthur Henry Frederick, Chem. Eng.....	Providence
Miller, Clara Katherine, Home Econ.....	Pawtucket
Mitchell, James Albert, Elec. Eng.....	Oakland
Moore, Harold Quentin, Mech. Eng.....	Westerly
Olsen, Chester Arthur, Elec. Eng.....	Providence
Riley, Henry Irving, Elec. Eng.....	North Attleboro, Mass.
Spargo, Raymond Alexander, Agr.....	Westerly
Springer, Franklin Hoxsie, Appl. Sci.....	Bristol
Stillman, Hannah Amelia, Home Econ.....	Westerly
Strand, Henry Richard, Agr.....	Brockton, Mass.
Torgan, Milton, Appl. Sci.....	East Providence
Walker, Frederick Earle, Civ. Eng.....	Arlington
Walsh, James Russell, Mech. Eng.....	Fall River, Mass.
Wansker, Joseph, Chem. Eng.....	South Boston, Mass.
Wells, Lester Earl, Elec. Eng.....	Norwood
Wilder, Harold Kenneth, Chem. Eng.....	North Leominster, Mass.

Sophomores

Baker, Sprague Sanborn, Appl. Sci.....	Brockton, Mass.
Barnard, Paul Dunham, Agr.....	Providence
Bartlemo, Thomas, Appl. Sci.....	Hughesdale
Benish, Theodore Albert, Agr.....	Perth Amboy, N. J.
Brierly, Ralph Ernest, Chem. Eng.....	Newport
Briggs, Leverett Asa, Appl. Sci.....	Ashaway
Brown, Reuben Wendell, Elec. Eng.....	Exeter
Burdick, Carl Amos, Elec. Eng.....	Watch Hill
Burgess, Wayland McColley, Chem. Eng.....	North Scituate
Caplan, Israel, Appl. Sci.....	Woonsocket
Cargill, Daniel Olney, Civ. Eng.....	Valley Falls
Carpenter, Edward Leroy, Mech. Eng.....	Peace Dale
Carpenter, Philip Martin, Elec. Eng.....	Peace Dale
Clark, Arthur Lincoln, Agr.....	Kingston

Clary, Stanley Woodbert, Agr.....	Pawtucket
Cohen, Samuel Harry, Elec. Eng.....	Conimicut
Cook, William Stanton, Appl. Sci.....	Woonsocket
Creedon, Michael Vincent, Mech. Eng.....	Brockton, Mass.
Damon, Elizabeth Elmore, Appl. Sci.....	Kingston
Damon, Louise Elmore, Home Econ.....	Kingston
Daneker, John Lachlan, Elec. Eng.....	Edgewood
Datson, Olive Marguerite, Home Econ.....	Westerly
Dowling, John Joseph, Chem. Eng.....	Providence
Eastwood, Edmund Cecil, Agr.....	Providence
Fritz, Carl Edwin, Chem. Eng.....	Providence
Gamble, Edward Henry, Chem. Eng.....	Pawtucket
Gardner, Anna Peckham, Home Econ.....	Saunderstown
Gardner, Harold Adino, Appl. Sc.....	Phenix
Goldstein, Israel, Chem. Eng.....	Providence
Hammond, Frank Gilbert, Elec. Eng.....	Lafayette
Hanson, Oscar Eugene, Agr.....	Providence
Harrington, Herman Battey, Agr.....	Providence
Harrington, Ralph Eldon, Mech. Eng.....	Providence
Henry, Patrick Charles, Elec. Eng.....	Providence
Hildreth, Charles Tew, Elec. Eng.....	Newport
Holley, Arthur Tucker, Agr.....	Wakefield
Hope, Earle Joseph, Civ. Eng.....	Woonsocket
Hope, Raymond Alpheus, Agr.....	Hyde Park, Mass.
Hopkins, Perry Horton Baker, Eng.....	Providence
Hudson, Albert Sprague, Agr.....	Harris
Hunt, Arthur Balch, Agr.....	East Providence
Irons, Merilla Althea, Home Econ.....	North Scituate
Kimball, George Pryce, Appl. Sci.....	Providence
Kinney, Heien Wells, Home Econ.....	Kingston
Knight, Howard Preston, Elec. Eng.....	Westerly
Knott, James Edward, Jr., Agr.....	East Greenwich
Kohlberg, Rudolph Horton, Agr.....	Providence
Leiboff, Samuel Leo, Appl. Sci.....	Westerly
Livingston, David Hood, Chem. Eng.....	Pawtucket

Luther, George Edward, App. Sci.....	Pawtucket
Mariani, Valentine Harry, Civil Eng.....	Providence
Marx, Howard Earle, Civ. Eng.....	Providence
Miller, Helen Frances, Appl. Sci.....	Narragansett Pier
Monahan, Leo Clement, Appl. Sci.....	Wakefield
Murphy, Maurice Vincent, Mech. Eng.....	Brockton, Mass.
Murray, Ruth Goodwin, Home Econ.....	Bristol
Nass, Louis, Appl. Sci.....	Pawtucket
Nichols, Ruhamah Robinson, Home Econ.....	Slocum
Northup, Kenneth LeRoy, Elec. Eng.....	Kingston
O'Brien, Charles Francis, Mech. Eng.....	Shelburne Falls, Mass.
Pearson, Harold Charles, Chem. Eng.....	Lynnfield Center, Mass.
Peterson, Thurston Waldemar, Mech. Eng.....	Pawtucket
Pla, Ramon Alijo, Chem. Eng.....	San Juan, Porto Rico
Randall, Lester Deloss, Agr.....	Providence
Reid, Earl Winslow, Mech. Eng.....	Brockton, Mass.
Reid, Fred Gavin, Agr.....	Wakefield, Mass.
Rioux, Raymond Joseph, Elec. Eng.....	Edgewood
Robertson, Alexander Barclay, Civ. Eng.....	Westerly
Rooney, Malcolm Francis, Appl. Sci.....	Brockton, Mass.
Roun, Carl David, Appl. Sci.....	Hillsgrove
Satti, Charles John, Appl. Sci.....	New London, Conn.
Scott, Philip Edwin, Agr.....	Providence
Seabury, Douglas Beveridge, Agr.....	Providence
Shepard, George Searle, Agr.....	North Easton, Mass.
Shippee, Florence Louise, Home Econ.....	Arlington
Slauson, Frederick Charles Thatcher, Chem. Eng.....	Winsted, Conn.
Smith, Lester Lawrence, Elec. Eng.....	Noank, Conn.
Smith, Priscilla DaCosta, Home Econ.....	Woonsocket
Spencer, Leander Burnside, Jr., Chem. Eng.....	East Greenwich
Stone, Albert, Appl. Sci.....	Meshanticut
Sullivan, Charles McManus, Chem. Eng.....	Providence
Thornton, Albert Angell, Agr.....	Johnston
Towne, Preston Wayland, Agr.....	Oaklawn
Trimble, George, Appl. Sci.....	Wakefield
Tweedell, William Theodore, Agr.....	Pawtucket
Waugh, George Lincoln, Agr.....	Lonsdale
Weeks, Ralph Martin, Mech. Eng.....	Groton, Conn.

Wheeler, John Edward, Agr.....	Brockton, Mass.
Wicks, Elinor Gertrude, Home Econ.....	Pawtucket
Wilbourn, Vernon James, Appl. Sci.....	Providence
Wood, David Lamson, Jr., Elec. Eng.....	Pawtucket
Woods, Frederic Mansur, Appl. Sci.....	West Bridgewater, Mass.
Wrubleski, Alexander John, Civ. Eng.....	Providence
Young, Margera Lenore, Home Econ.....	Westerly

Freshmen

Arnold, Everett Perry, Appl. Sci.....	Wakefield
Arnold, Walter Bennett, Agr.....	Saylesville
Ashcroft, Isabella, Home Econ.....	Pawtucket
Baker, Louise, Home Econ.....	Pawtucket
Barber, Henry Louis, Appl. Sci.....	Providence
Beasley, Dorald Dewey, Eng.....	Woonsocket
Belcher, Daniel Webster, Agr.....	North Easton, Mass.
Bemis, George Harold, Eng.....	Shelburne Falls, Mass.
Benson, Leonard Everett, Eng.....	Westerly
Berkovitz, Robert Reuben, Eng.....	Riverside
Biggs, Francis Lincoln, Eng.....	Providence
Bloom, Manuel Serge, Eng.....	Providence
Bogosian, Harry Der, Eng.....	Providence
Boynton, Joseph Powers, Appl. Sci.....	Campello, Mass.
Briggs, Frederic Robinson, Agr.....	Manchester, Conn.
Burke, John Raymond, Appl. Sci.....	Westerly
Campbell, Emily Catherine, Home Econ.....	Newport
Carnie, William Brown, Eng.....	Woonsocket
Carroll, John Roger, Eng.....	Woonsocket
Cella, Leo Lawrence, Appl. Sci.....	Westerly
Clapp, Revere Elliott, Eng.....	Westerly
Clarke, Horace Wilbur, Eng.....	Providence
Colwell, Samuel Greene, Eng.....	Providence
Copeland, Everett Adams, Eng.....	Edgewood
Cornell, Mary Estelle, Home Econ.....	Westerly
Craig, Wallace Charles, Eng.....	Westerly
Crandall, Harry Franklin, Appl. Sci.....	Westerly
Cronin, William Girard, Eng.....	Central Falls
Cruise, Lillian Marie, Home Econ.....	Pawtucket
Damon, Albert Willard, Agr.....	Kingston
Dimitroff, Vladimir Tryphon, Eng.....	North Scituate

Driscoll, Emmett Joseph, Eng.....	Pawtucket
Edwards, Mildred Elizabeth, Home Econ.....	Kingston
Emery, Waldo Daniel, Eng.....	Woonsocket
Fenwick, Harold Matthew, Eng.....	North Easton, Mass.
Fine, Samuel B., Appl. Sci.....	Attleboro, Mass.
Finn, Joseph William, Appl. Sci.....	Providence
Gardiner, Milton Warren, Eng.....	Saylesville
Gates, Henry Stillman, Agr.....	Narragansett Pier
Gibson, Harold Pearson, Eng.....	Newport
Glaubman, Max, Eng.....	Providence
Goddard, Charles Harold, Eng.....	Bristol
Gordon, Barney Benjamin, Eng.....	Providence
Gray, Russell Perry, Agr.....	Attleboro, Mass.
Green, Whitney Eastman, Eng.....	Kingston
Hart, Charles Gerald, Appl. Sci.....	Roxbury, Mass.
Haslam, Arthur Edmond, Agr.....	Providence
Hawes, Howard Haldane, Agr.....	Riverside
Hawes, Russell Cheney, Agr.....	Riverside
Hillard, Paul Noyes, Eng.....	Westerly
Hoffman, Elsa, Home Econ.....	Pawtucket
Holley, Charles Potter, Eng.....	Kingston
Holmes, John Foster, Agr.....	Needham, Mass.
Horton, Harold Smith, Agr.....	Attleboro, Mass.
Janson, John Charles, Eng.....	Lawrence, Mass.
Kaufman, Max, Agr.....	Providence
Kelly, Robert Vincent, Appl. Sci.....	Woonsocket
Kenyon, Howard Vernon, Eng.....	Lafayette
Kenyon, Walter Alexander, Agr.....	Hopkinton
Koehler, Walter Bernard Paul, Agr.....	Menomonie Falls, Wis.
Kwasha, Leonard James, Eng.....	Providence
Leand, Milton, Eng.....	Providence
Lowry, Moses Christy, Appl. Sci.....	Westerly
MacNaught, Louise Jane, Home Econ.....	Providence
Maliff, Thomas, Agr.....	North Easton, Mass.
Malloy, James Lawrence, Eng.....	Woonsocket
Maloney, John Joseph, Eng.....	Pawtucket
McCabe, James Patrick, Eng.....	Glendale
McDonald, Ian Philip, Appl. Sci.....	Newport

McKee, Samuel Allen, Eng.....	Woonsocket
McKenzie, Daniel Bartlett, Appl. Sci.....	Essex, Mass.
Messerlian, Leon John, Eng.....	Providence
Nelson, Signe Elen Marie, Home Econ.....	Rumford
Newman, Hyman Leo, Eng.....	Providence
Newman, Maurice Jacob, Appl. Sci.....	Edgewood
Nichol, Edna Frances, Home Econ.....	Woonsocket
Niles, Owen Albert, Eng.....	Wyoming
Nordquist, Clarence Edward.....	Elmwood
Nye, William Carr, Appl. Sci.....	Brockton, Mass.
O'Byrne, Christopher James, Agr.....	Brockton, Mass.
O'Connell, Howard Joseph, Agr.....	Providence
O'Donnell, Howard Joseph, Eng.....	Providence
Palmer, Earl Geer, Eng.....	Hope Valley
Papalia, Philip Dewey, Appl. Sci.....	Westerly
Peterson, Esther Wilhelmina, Home Econ.....	Westerly
Pihl, Roland Taylor, Eng.....	Peace Dale
Raymond, Nellie, Home Econ.....	Essex, Mass.
Records, Lawrence Austin, Agr.....	Brockton, Mass.
Reid, Frank, Agr.....	Wakefield, Mass.
Reilly, Eugene Anthony, Appl. Sci.....	Blackstone, Mass.
Remington, Allen Knight, Appl. Sci.....	Central Falls
Remington, Ralph Brayton, Agr.....	Fiskeville
Robitaille, Eugene Francis, Eng.....	Providence
Rossi, Albert Michael, Eng.....	Providence
Schuman, Abraham, Appl. Sci.....	Westerly
Sekowski, John Joseph, Agr.....	North Attleboro, Mass.
Sisson, Albert Peckham, Agr.....	Little Compton
Sklut, Israel, Eng.....	Elmwood
Smith, Howard Bucklin, Appl. Sci.....	Providence
Smith, Leonard Edward, Eng.....	Providence
Spink, Herbert Elmer, Eng.....	Davisville
Stillman, Elizabeth, Home Econ.....	Westerly
Stuart, William Charles, Eng.....	Poquonnock Bridge, Conn.
Sweetland, Sherburne Pride, Eng.....	Rumford
Taft, Richard Christie, Eng.....	Brockton, Mass.
Tattersall, Gladys Mary, Appl. Sci.....	Fall River, Mass.
Thackray, Elsie Law, Home Econ.....	Pawtucket

Thomas, Abraham, Agr.....	Providence
Turkel, Sidney, Eng.....	Providence
Veneziale, Anthony, Eng.....	Providence
Walker, William Joseph, Appl. Sci.....	Providence
Washington, Silas Perry, Eng.....	Newport
Wells, Nathaniel Dewey, Eng.....	Ashaway
Whaley, Andrew Thomas, Eng.....	Peace Dale
Whitcomb, Henry Alexander, Eng.....	New London, Conn
Whitford, Ada Elizabeth, Home Econ.....	Wakefield
Whitford, Amy Ann, Home Econ.....	Wakefield
Wittman, Victor, Agr.....	Providence
Whyte, Arthur John, Agr.....	North Easton, Mass.
Wiley, John Douglass, Agr.....	Pawtucket
Wood, Elsie Muriel, Home Econ.....	Pawtucket
Woodbury, Kenneth James, Agr.....	Providence

Two-Year Course in Agriculture

Boyce, Frank Alexander.....	Lonsdale
Brooks, Frank Raymond.....	Riverside
Christie, Willis Alfred.....	Groton, Conn.
Douglass, Melvin Loren.....	Groton, Conn.
Foster, Ralph Sargent.....	North Andover, Mass.
Francis, Albert Henry.....	Woonsocket
Fritts, Andrew George.....	New London, Conn.
Greene, Harold Allen.....	East Greenwich
Hess, John R., Jr.....	Providence
Huntington, Valentine Erskine.....	Newport
Kent, Earle Henry	Slocums
McDonald, Gilbert Hart.....	Providence
Miner, Owen Stewart.....	Groton, Conn.
Murdock, Ernest Lawrence.....	Norwood
Newton, Harold Spencer.....	Bradford
Pancieria, George	Bradford
Spaulding, Harold Manning.....	Woonsocket

Irregular

Bloxham, Harold Carlton, Chem. Eng.....	Pawtucket
Butler, Edward James.....	Westerly
Livermore, Nellie Evelyn.....	Pawtucket

Miller, Marie, Home Econ.....	Kingston
Nee, Wen Chin.....	New London, Conn.
O'Brien, James	Woonsocket
Rickey, Harry Webb.....	Kingston
Savage, Philip Joseph.....	New London, Conn.

Summary

Graduate	6
Senior	38
Junior	51
Sophomore.	94
Freshmen	122
Irregulars	8
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	319
Two-Year.	17
	<hr/>
Total.	336

Graduates *

1894

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD..... M. Agr. R. I. State College, 1916. Kingston.	Agr.	Professor of Agronomy, R. I. S. C.
AMMONDS, GEORGE CLARENCE..... 54 Eliot St., Boston, Mass.	Mech.	Railroad Postal Clerk, on N. Y., N. H. & H. R. R.
ARNOLD, CHAPIN TRAFFORD..... Box 57, Providence.	Agr.	Electrical Contractor, Office 26 Custom House St., Providence.
BURLINGAME, GEO. WASHINGTON... R. F. D. No. 2, Box 56, North Scituate.	Agr.	Farmer and Teacher.
CLARK, HELEN MAY (MRS. WM. F. B. LEAVITT), B. L. Smith Col- lege, 1899. Essex Fells, New Jersey.		At home.
KNOWLES, JOHN FRANKLIN..... Narragansett Pier.	Mech.	With The Bristow Bros., Knowles Corporation.
†MADISON, WARREN BROWN.....	Agr.	
MATTHEWSON, ERNEST HOXIE.... Ph. B., Brown University, 1896. Reidsville, North Carolina.	Mech.	Crop Technologist in Tobacco, U. S. Department of Agriculture.
PECKHAM, REUBEN WALLACE..... 556 White St., Springfield, Mass.	Agr.	Student, International Y. M. C. A. College.
RATHBUN, WILLIAM SHERMAN.... 38 Forest St., Willimansett, Mass.	Agr.	Proof-Reader, Eureka Blank Book Co., Holyoke, Mass.
RODMAN, GEORGE ALBERT..... New Haven, Conn.	Mech.	General Supervisor, Bridges and Buildings, Union Station, N. Y., N. H. & H. R. R. Co.
SARGENT, CHARLES LAWRENCE..... Ph. D., University of Pennsylvania, 1900. 9 Thomas St., Newark, New Jersey.	Agr.	Superintendent, Color Department, Murphy Varnish Co.
SLOCUM, SAMUEL WATSON..... 60 Summer St., Westerly.	Agr.	Instructor of Woodwork, West- erly Schools.
SPEARS, JOHN BARDEN..... Foster Centre.	Agr.	Rural Letter Carrier.

* It is earnestly desired that graduates inform the college office of any permanent change of address.

† Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SWEET, STEPHEN ADELBERT.....	Agr.	Farmer.
Slocums.		
TUCKER, GEORGE MASON.....	Agr.	Farmer.
Ph. D. Göttingen, 1899		
Box 94 P. Route No. 8, Chevy		
Chase Branch, Washington, D.		
C.		
WILBUR, ROBERT ARTHUR.....	Mech.	Carriage-maker and blacksmith.
East Greenwich.		

1895

*ALBRO LESTER FRANKLIN.....	Agr.	
BURDICK, HOWLAND.....	Agr.	Assistant Professor of Dairying, R. I. S. C.
Kingston.		
CLARKE, CHARLES SHERMAN.....	Mech.	Marine Engineer.
22 Wood St., Bristol.		
ELDRED, MABEL DEWITT.....		Instructor in Drawing, R. I. S. C.
Kingston.		
HAMMOND, JOHN EDWARD.....	Agr.	Farmer.
Jamestown.		
OATLEY, LINCOLN NATHAN.....	Mech.	Contractor and builder; Coal Dealer.
Wakefield.		
SCOTT, ARTHUR CURTIS.....	Mech.	Consulting Engineer.
Ph. D., Univ. of Wisconsin, 1902.		
4114 Cedar Springs Ave, Dallas,		
Texas.		
TEFFT, JESSE COTTRELL.....	Mech.	Purser, Newport and Jamestown Ferryboat Co.
Jamestown.		
WINSOR, BYRON EDGAR.....	Mech.	Poultryman.
Coventry.		

1896

BROWN, MAY (MRS. CHARLES A. WHITE).	At home
Narragansett Pier.	
GREENMAN, ADELAIDE MARIA	
(MRS. R. WALLACE PECKHAM).....	At home.
Graduate, School of Expression, 1901,	
556 White St., Springfield, Mass.	
KENYON, ALBERT LEWIS.....Mech.	In business.
240 Camp St., Providence.	
MOORE, NATHAN LEWIS CASS.....Agr.	Fruit-grower, citrus culture.
Oneco, Florida.	
TABOR, EDGAR FRANCIS.....Mech.	Foreman Printer The Southbridge
39 Everett St., Southbridge, Mass.	• Printing Co.,
*WILLIAMS, JAMES EMERSON.....Agr.	

1897

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS..... Shannock.	Sci.	Commercial Grower of Fruits and Flowers.
CASE, HERBERT EDWARDS BROWN.. Ph. B., Brown University, 1900. Graduate, Hartford Theological Seminary, 1904. 14 Beacon St., Boston, Mass.	Mech.	Secretary, Amer. Board of Commissioners for Foreign Missions.
GRINNELL, ARCHIE FRANKLIN..... 292 Laurel Hill Ave., Norwich, Conn.	Mech.	Foreman, Hopkins and Allen Arms Co.
HANSON, GERTRUDE MAIE.....	Sci.	Principal of School, Wakefield Westerly.
HOXSIE, BESSIE BAILEY (MRS. E. F. RUECKERT).....	Sci.	At home.
198 Melrose St., Providence.		
KENYON, ALBERT PRENTICE.....	Mech.	Bookkeeper, Maxson & Co., Westerly.
23 Courtland St., Westerly.		
KENYON, CHARLES FRANKLIN.....	Mech.	Engineer.
Shannock.		
LARKIN, JESSE LOUISE.....	Sci.	Genealogist.
98 Beach St., Westerly.		
*MARSLAND, LOUIS HERBERT.....	Mech.	
TEFFT, ELIZA ALCE.....	Sci.	Teacher.
Exeter Hill.		
THOMAS, IRVING	Mech.	Farmer and Mill Operative.
Lafayette.		

1898

ARNOLD, SARAH ESTELLE (MRS. R. O. BROOKS).....	Sci.	At home.
975 East 18th St., Brooklyn, N. Y.		
BARBER, GEORGE WASHINGTON.....	Agr.	Rancher.
Glendora, Cal.		
CARGILL, EDNA MARIA (MRS. LESTER H. BROWN).....	Sci.	At home.
R. F. D. No. 2, Box 96. Valley Falls.		
CASE, JOHN PETER	Agr.	Mgr. Western Office, Brown Hoisting Machinery Company.
251 Monadnock Bldg., San Francisco, Cal.		
CLARKE, WILLIAM CASE.....	Sci.	General Manager, Narragansett Pier Elec. Light and Power Co.;
Wakefield.		
CONGDON, HENRY AUGUSTUS.....	Mech.	Farmer.
Kingston.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FLAGG, MARTHA REBECCA..... Abbott Run.	Sci.	At home.
HARLEY, WILLIAM FERGUSON..... 23 Summit Ave., Providence.	Agr.	Buyer, with Messrs. Callender, McAuslan & Troup, Providence.
TURNER, HARRIETTE FLORENCE (MRS. GEO. M. TUCKER).....	Sci.	At home.
Graduate, Drexel Institute, 1900. Box 94 P, Route No. 8, Chevy Chase Branch, Washington, D. C.		
WILSON, GRACE ELLEN (MRS. W. F. HARLEY).....	Sci.	At home.
23 Summit Ave., Providence.		

1899

BOSWORTH, ALFRED WILLSON..... A. M., Harvard University, 1913, 418 Brook Road, Milton, Mass.	Sci.	Biological Chemist, Boston Float- ing Hospital.
BROOKS RALPH ORDWAY..... 975 East 18th St., Brooklyn, N. Y.	Sci.	Consulting Chemist, Bacteriolo- gist, Microscopist, Food-Inspec- tion Expert, 191 Franklin St., New York City.
GEORGE LILLIAN MABELLE..... A. B., Univ. Illinois, 1904. Graduate, N. Y. State Library School, 1910., 135 N. 26th St., Corvallis, Ore.	Sci.	Cataloger, Oregon Agricultural College Library.
HARVEY, MILDRED WAYNE (MRS. WM. H. BLISS).....	Sci.	At home.
76 St. Nicholas Place, New York City.		
KENYON, BLYDON ELLERY..... 123 Pembroke Ave., Dallas, Texas.	Agr.	Engineer, for Stone & Webster Eng. Corporation.
KNOWLES, CARROLL 77 Chiswick Road, Edgewood.	Mech.	Chief Tool Designer, Brown & Sharpe Mfg. Co.
KNOWLES, HARRY Ph. B. Brown University, 1906. 162 W. 64th St., N. Y. City.	Sci.	Writer, Advertising.
LADD, MERRILL AUGUSTUS Jacksonville, Fla.	Mech.	Secretary and Treasurer, Florida Electric Supply Co.
MORRISON, CLIFFORD BREWSTER..... New Haven, Conn.	Sci.	Assistant Chemist, Conn. State Experiment Station.
OWEN WILLIAM FRAZIER..... Schenectady, N. Y.	Mech.	Engineering Department, General Electric Co.
PAYNE, EBENEZER..... M. D., Univ. Michigan, 1904. Glendora, Cal.	Sci.	Orange Grower.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
PHILLIPS, WALTER CLARKE..... Ph. B., Brown University, 1902. A. M., Brown University, 1903. Providence.	Mech.	Instructor in English, Brown University.
REYNOLDS, ROBERT SPINK..... Room 314, Gen. Office Bldg., New Haven, Conn.	Mech.	Assistant Engineer, Bridge Dept., N. Y., N. H. & H. R. R. Co.
RICE, MINNIE ELIZABETH (MRS. ROBERT J. SHERMAN)..... Exeter Hill.	Sci.	At home.
SHERMAN, ABBIE GERTRUDE (MRS. BENJAMIN BARTON)..... 56 Pavilion Ave., Providence.	Sci.	At home.
*SHERMAN, GEORGE ALBERT.....	Mech.	
THOMPSON, SALLY RODMAN (MRS. LEWIS BALCH, JR.)..... Wakefield.	Sci.	At home.

1900

FRIGHTMAN, HENRY MAXSON.... 32 Mountain Ave., Edgewater, N. J.	Mech.	Drying Expert, with B. F. Sturtevant Co., Room 1706, 52 Vanderbilt Ave., New York City.
CROSS, CHARLES CLARK	Mech.	Vice-President and General Manager, Troy Mfg. Co.
ELDRED, JOHN RALEIGH..... Kingston.	Mech.	Instructor in Mechanical Engineering, R. I. S. C.
FISON, GERTRUDE SARAH (MRS. JOHN W. ROOT)..... 139 Fresh Pond Parkway, Cambridge, Mass.	Sci.	At home.
FRY, JOHN JOSEPH..... Greenwich, Conn.	Sci.	Supervising Principal Byram School and Hamilton Ave. School
GODDARD, EDITH (MRS. LAWRENCE B. REED)..... 20 North St., Plymouth, Mass.	Sci.	At home.
KENYON, AMOS LANGWORTHY..... Wood River Junction.	Agr.	Dairyman.
MUNRO, ARTHUR EARLE..... Ph. B., Brown University, 1902. 41 George St., Providence.	Sci.	Attorney-at-law, 49 Westminster St.
SOULE, RALPH NELSON..... Racine, Wisconsin.	Sci.	Mgr., Gen. Service Dept., Mitchell Motor Co., 842 Main St., Racine.
STEERE, ANTHONY ENOCH..... 3 Mark Bldg., Amsterdam, N. Y.	Mech.	Resident Civil Engineer, New York State Canals.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
STILLMAN, LENORA ESTELLE.....	Sci.	Teacher.
1046 Greene Ave., Brooklyn, N. Y.		
TUCKER, BERTHA DOUGLASS.....	Sci.	Assistant, Boston Trade School.
Franklin Square House, Boston, Mass.		
WHEELER, CHARLES NOYES.....	Sci.	Clerk, Wm. H. Haskell Manufac- turing Co.
21 Cedar St., Pawtucket.		
WILSON, JOSEPH ROBERT.....	Mech.	Surveyor.
184 Grace St., Auburn.		

1901

BRAYTON, CHARLES ANDREW.....	Agr.	Farmer.
Hope, R. F. D.		
BIGGS, NELLIE ALBERTINE.....	Sci.	Stenographer, R. I. Hospital Trust Co.
Providence.		
BURGESS, CHARLES STUART.....	Mech.	Draughtsman, Brown & Sharpe Mfg. Co.
264 Sayles St., Providence.		
CLARNER, LOUIS GEORGE KARL, JR....	Sci.	Insurance Engineer, N. E. Bureau of United Inspection.
23 Chelmsford St., Dorchester, Mass.		
DAWLEY, EDNA ETHEL.....	Sci.	At home.
(MRS. GEORGE W. WHITFORD)		
West Kingston, R. F. D., Box 80.		
DENICO, ARTHUR ALBERTUS.....	Sci.	Traffic Engineer, with American Telephone and Telegraph Co.
Ph. B., Brown Univ., 1904.		
521 West 185th St., New York City.		
*JAMES RUTH HORTENSE.		
(MRS. HERBERT E. ROUSE).....	Sci.	
SHERMAN, ANNA BROWN.....	Sci.	At home.
(MRS. JOSEPH R. WILSON)		
184 Grace St., Auburn.		
SHERMAN, ELIZABETH AGNES.....	Sci.	Secretary to Research Chemist, Arthur D. Little, Inc., Boston.
424 Mass. Ave., Boston, Mass.		
SMITH, HOWARD DEXTER.....	Sci.	Instructor in Chemistry, Lowell Textile School.
A. M., Brown University, 1904		
Ph. D., Tufts College, 1906.		
30 Hawthorne St., Lowell, Mass.		
STEERE, ROWENA HOXIE.....	Sci.	Stenographer.
102 Sassafras St., Providence.		
*WILBY, JOHN	Sci.	

1902

CLARKE, LATHAM	Chem.	Director, Instituto de Quimica In- dustrial.
A. M., Brown University, 1903:		
Ph. D., Harvard University, 1905		
Montevideo, Uruguay.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FERRY, OLIVER NEEDHAM..... Maple Hill, New Britain, Conn.	Mech.	Mechanical Engineer, Ashcroft Mfg. Co., Bridgeport, Conn.
MAXSON, RALPH NELSON..... Ph. D., Yale University, 1905. 366 Transylvania Park, Lexington, Ky.	Chem.	Professor Inorganic Chemistry, State University.
PITKIN, ROBERT WILLIAM..... Rockville, Conn., R. F. D. No. 1.	Mech.	Farmer.

1903

BARBER, KATE GRACE (MRS. A. L. WINTON)..... Ph. D., Yale University, 1906. 1322 Vermont Ave., Washington, D. C.	Gen. Sci.	Investigations in Vegetable Histo- logy.
CONANT, WALTER AIKEN..... Temple, N. H.	Agr.	Dairying, The Conant and Clem- ent Farms, Hillsboro County.
GODDARD, WARREN, JR..... Graduate, New Church Theolo- gical School, 1907. Browne Hall, Urbana, Ohio.	Mech.	Instructor in Physics, Chemistry and Theology, Urbana Univ. Schools.
KEEFER, EDITH CECILIA..... 260 West 57th St., New York City.	Biol.	Teacher of Mathematics, Miss Spence's School.
KENT, RAYMOND WARREN..... A. M., Harvard University, 1904. East Palestine, Ohio.	Chem.	Chemist, Maguire Rubber Co.
TEFFT, ERNEST ALLEN..... 85 Larch St., Providence.	El. Eng.	Electrical Contractor, 87 West- minster St.

1904

BALLOU, WILLARD ALGER..... B. S., Columbia Univ., 1913. M. A., Columbia Univ., 1915. 335 Lafayette Ave., Brooklyn, N. Y.	Biol.	Instructor in Mathematics, Pratt Institute.
QUINN, MARY LOUISE..... Wakefield.	Biol.	Teacher of Science.
RODMAN, WALTER SHELDON.... M. S., R. I. C. A. & M. A., 1907. M. S., Mass. Inst., Tech., 1909. Box 222, University, Va.	El. Eng.	Professor of Electrical Engineer- ing, University of Virginia.

1905

CHAMPLIN, SARAH ELIZABETH.. (MRS. HAROLD L. FRIEND) 306 Smith St., Edgewood.	Gen. Sci.	At home.
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NAME AND ADDRESS.	COURSE.	OCCUPATION.
DOW, VICTOR WELLS..... Berwyn, Penna.	High. Eng.	Assistant to President, American Bronze Co.
GILMAN, JEAN..... Hampton, Va.	High. Eng.	Assistant to Director of Trade School, Hampton Institute.
HARRALL, NELLIE ARMSTRONG. (MRS. B. H. ARNOLD).....	Gen. Sci.	At home.
Graduate, Sargent School of Physical Education, 1909. 555 West 10th St., Erie, Pa.		

1906

ARNOLD, BENJAMIN HOWARD... 555 West 10th St., Erie, Pa.	El. Eng.	Supervisor of Tests, Erie Works, General Electric Co.
*BERRY, WALLACE NOYES.....	El. Eng.	.
ELKINS, MARION GRAHAM.... Ph. D., Yale University, 1912. 10 Moody St., Amesbury, Mass.	Gen. Sci.	At home.
HARDING, LEE LAPLACE.... 11 Parsons St., West Newton, Mass.	High. Eng.	Manager, Farm Power Dept., Ames Plow Co., Boston, Mass.
KEYES, FREDERICK GEORGE..... Sc. M., Brown Univ., 1907. Ph. D., Brown Univ., 1909. 60 Fenway, Boston, Mass.	Chem.	Associate Professor of Physics and Chem. Research, Mass. In- stitute of Technology.
NICHOLS, HOWARD MARTIN.... 64 Clifford St., Readville, Mass.	El. Eng.	Engineer, B. F. Sturtevant Co.
SISSON, CORA EDNA..... (MRS. BENJAM D. BUSH.,) M. S., Brown Univ., 1910. Lakewood, N. J.	Gen. Sci.	At home.
WILKINSON, ALBERT EDMUND..... M. Agr., R. I. State College, 1916. 101 Elmwood Ave., Ithaca, N. Y.	Agr.	Assistant Extension Professor, Vegetable Gardening, Cornell University.

1907

BARBER, ARTHUR HOUGHTON. East Greenwich.	Mech. Eng.	Inspector for Associated Factory Mutual Fire Insurance Cos., Boston, Mass.
COGGINS, CALVIN LESTER..... Kingston.	El. Eng.	Assistant Professor of Physics and Elec. Eng., R. I. S. C.
FERRY, JAY RUSSELL..... 677 Rutherford Ave., Trenton, N. J.	High. Eng.	Draftsman, American Bridge Co.

- KELLOGG, DAVID RAYMOND.....Chem. Asst. Physical Chemist, Bureau of
Ph. D., Ohio State University, 1912. Mines.
Anaconda, Montana.
- KENDRICK, WINFIELD SMITH....El. Eng. Specialist, General Electric Co.
115 Waverly Place,
Schenectady, N. Y.
- LAMOND, JOHN KENYON.....El. Eng. Professor of Mathematics, Penn-
M. A., Yale Univ., 1908. sylvania College.
Ph. D., Yale Univ., 1910.
Broadway, Gettysburg, Pa.
- LEWIS, HARRY REYNOLDS.....Agr. Professor, Dairying and Poultry
M. Agr., R. I. S. C., 1916. Husbandry, Rutgers College.
1 Clifton Ave.,
New Brunswick, N. J.
- *MACOMBER, MINER SANFORD.....Chem.
- TUCKER, ETHEL ALDRICH
(MRS. LITTLETON C. HAYDEN) Gen. Sci. At home.
28 Sadler Ave., Pittsfield, Mass.

1908

- DREW, JOSEPH DRAKE.....Chem. Chemist, Tenn. Coal, Iron & R. R.
2010 Avenue H, Co.
Ensley, Alabama.
- FIELD, CLESSON HERBERT.....Civ. Eng. Contracting Engineer, Ferguson
C. E., Lehigh Univ., 1909. Steel & Iron Co., Buffalo, N. Y.
272 Washington Highway,
Snyder, N. Y.
- FISKE, HERBERT ANDREW.....El. Eng. Electrician for Beacon Mfg. Co.
497 Summer St.,
New Bedford, Mass.
- GARDINER, ROBERT FRANKLIN.....Chem. Asst. Chemist, Bureau of Soils,
M. S., George Washington U. S. Dept. of Agriculture.
University, 1914.
Box 344, Clarendon, Va.
- GORY, EDWARD ALLEN.....El. Eng. Assistant, Shop Electric Plant,
72 Canterbury St., Dorchester, Mass. General Electric Co., Lynn,
Mass.
- KENYON, SUSAN ELNORA
(MRS. FRED K. CRANDALL).....Biol. At home.
Westerly.
- MITCHELL, CLOVIS WILLIAM...Civ. Eng. Assistant Principal and Instructor
5 Allen St., Amherst, Mass. in Science, High School.
- POSE, ORPHA LILLIE
(MRS. HENRY A. CONGDON)..Gen. Sci. Teacher.
Kingston.

NAME AND ADDRESS.

COURSE.

OCCUPATION.

SHELDON, GEORGE WARE.....	El. Eng.	With Westinghouse Electric Co. 6039 Hoeveler St., Pittsburgh, Pa.
SHERMAN, MARY ALBRO.....	Agr.	At home. (MRS. FRED M. MANLY) West Fairlee, Vt.
SMITH, JOHN LEBRO.....	El. Eng.	Teacher of Mathematics, Crosby High School. A. M., Brown Univ., 1915. 41 Holmes Ave., Waterbury, Conn.
WHIPPLE, LUCIUS ALBERT.....	Civ. Eng.	Superintendent of Schools, Town of Lincoln. 19 Walker Ave., Saylesville.

1909

CARGILL, RHOBIE LUCELIA.....	Appl. Sci.	Teacher of Mathematics, Techni- cal High School. 183 Pearl St., Providence.
CRAIG, JAMES MCINTYRE.....	Agr.	Gardener and Merchant. Santa Fe, 1074. Rosario, Argentine.
CRANDALL, FRED KENYON.....	Agr.	Farmer. Westerly.
FRENCH, HENRY FRANK.....	El. Eng.	Turbo-Generator Engineer, Gen- eral Electric Co. 20 Bennett Circle, Lynn, Mass.
HOWE, ALBERT MENDEL.....	El. Eng.	Assistant General Foreman, Re- pair Dept., Bay State St. Ry. Co. 1 Rockland St., Brockton, Mass.
KNOWLES, WALTER.....	Civ. Eng.	Valuation Dept., N. Y., N. H. & H. R. R. Co. Kingston.
LEE, ALFRED ROGERS.....	Agr.	Animal Husbandman, in Poultry Investigation, Bureau of Animal Industry, U. S. Dept. of Agri- culture. 2513 N. Capitol St., Washington, D. C.
MORAN, WALTER JOHN.....	Civ. Eng.	Civil Engineer, N. Y., N. H. & H. R. R. Co. R. F. D., Uncasville, Conn.
MOYER, LOUIS EARL.....	Civ. Eng.	Civil Engineer, State of New York, Commission of Highways. Seneca Falls, N. Y.
ROCKWELL, RUBY BELLE.....	Chem.	At home. (MRS. JOHN O'LOUGHLIN) 604 N. Salina Ave., Syracuse, N. Y.
SMITH, ELMER FRANCIS.....	El. Eng.	Principal Roselle Park High School. 225 Walnut St., Roselle Park, N. J.
TISDALE, HARRY ROBERT.....	Chem.	Chemist and Foreman, Brainerd & Armstrong, Silk M'f'rs. Mass. Inst. Technology, 1911. 360 Broad St., New London, Conn.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
TUCKER, ELLEN CAPRON..... Kingston.	Gen. Sci.	At home.
1910		
BURGESS, PAUL STEERE..... M. S., University of Illinois, 1911. Honolulu, Hawaii.	Chem. Eng.	Chief Chemist and Bacteriologist, with Hawaiian Sugar Planters' Association, Experiment Sta- tion.
CARPENTER, RANDOLPH HAYWOOD 3015 Farragut Road, Brooklyn, N. Y.	El. Eng.	Sales Engineer, Westinghouse Electric & Mfg. Co., 165 Broad- way.
CUMMINGS, ROBT. WINTHROP 25 South 2nd St., Easton, Penn.	Mech. Eng.	Engineer, Ingersoll-Rand Co., Phillipsburg, N. J.
GOODALE, RALPH WALDO..... 921 Howard Ave., New Haven, Conn.	Civ. Eng.	Draftsman, Construction Dept., N. Y., N. H. & H. R. R. Co.
HARDY, JOHN IRA..... Columbia, Mo.	Gen. Sci.	Grad. Student, University of Mis- souri.
HEATH, BERTHA MAY..... Lunenburg, Mass.	Agr.	Teacher, Kingston.
KENYON, AMOS HARRIS..... 131 Abbott St., Providence.	El. Eng.	Traffic Chief, American Tel. & Tel. Co.
LAMOND, HELEN SCOTT..... (Mrs. R. H. CARPENTER) 3015 Farra- gut Road, Brooklyn, N. Y.	Gen. Sci.	At home.
MOUNCE, LEROY LEIDMAN..... South Woodstock, Vt.	Agr.	Manager, Upwey Farms.
FEABODY, GEORGE ABBOTT..... Box 733, Balboa, Canal Zone.	El. Eng.	Electrical Superintendent, Con- struction of U. S. Coaling Plant on Panama Canal.
SHERMAN, JOHN LELAND..... R. F. D. 147, Mansfield, Mass.	Agr.	Farmer.
SMITH, HIRAM JAMESON..... Palmer, Mass.	Civ. Eng.	Resident Engineer, Southern New England Railroad.
WAGNER, ALBERT FREDERIC..... M. S., Purdue Univ., 1913. 1625 Clark St., Wilkesburg, Pa.	El. Eng.	In Research Lab., Westinghouse Elec. Co.
WHEELER, RICHARD HOWES.... 1623 Hutchinson St., Montreal, Canada.	El. Eng.	Engineer, Electric Traction, Shawinigan Falls, Terminal Railway.
WORRALL, DAVID ELBRIDGE..... M. A., Harvard Univ., 1911. 64 Massasoit St., Northampton, Mass.	Chem.	Instructor in Chemistry, Smith College.

1911

ANDREWS, CARMEN NICHOLS... Slocums.	Appl. Sci.	Teacher, A. P. Hoyt School, East Providence.
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NAME AND ADDRESS.

COURSE.

OCCUPATION.

ANGILLY, CHARLES ENOCH, JR.	Civ. Eng.	Instrument man, Department of Public Service, L. A. City.
1016 W. 23d St., Los Angeles, Cal.		
EASTERBROOKS, HAROLD ARNOLD....	Biol.	In business.
280 Benefit St., Providence.		
EASTERBROOKS, LOUIS CHURCH.....	Agr.	In business.
280 Benefit St., Providence.		
GILCHREST, CLYDE RONALD....	Elec. Eng.	Detail and Supply Dept., Westinghouse Electric and Manufacturing Co.
1172 South Ave., Wilksburg, Pa.		
HARRIS, BURTON KENNETH..	Chem. Eng.	Lime Manufacturer and Chemist.
R. F. D., Saylesville.		
HEALY, PATRICK JOSEPH.....	Agr.	Gardener, Mahwah, N. J.
Newport.		
KENT, ROBERT WILLARD.....	Mech. Eng.	Industrial Engineer, Cooley & Marvin Co., Accountants and Engineers.
711 Tremont Building, Boston, Mass.		
MINOR, ARTHUR JACOB.....	Civ. Eng.	With National Employment Exchange, 30 Church St., New York City.
C. E., R. I. S. C., 1915, New York City.		
NEAL, WILLIAM THOMAS.....	Agr.	Proprietor of Tripp Floral Co.
Walton, New York.		
ROBINSON, BENJ. ROWLAND..	Mech. Eng.	Combustion Engineer, Aluminum Co. of America.
57 Bridges Ave., Massena, N. Y.		
RUPRECHT, RUDOLF WILLIAM..	Appl. Sci.	Chemist, F. W. Junnell & Co.
M. S., Mass. Agr. College, 1914.		
Ph. D., Mass. Agr. College, 1916,		
Gaul St. and Wheatsheaf Lane (Frankford Station)		
Philadelphia, Pa.		
SAFFORD, HOWARD ALBERT.....	Agr.	Chief Gardener.
National Soldiers' Home, Maine.		
TUCKER, HARRIET TABER.....	Gen. Sci	At home.
(MRS. DAVID E. WORRALL)		
64 Massasoit St., Northampton, Mass.		
WADE, CEYLON RAYMOND.....	Civ. Eng.	Civil Engineer, with Interstate Commerce Commission, Division of Valuation.
Box 104, Bridgeton.		

1912

BARLOW, HENRY NEWELL....	Elec. Eng.	Dairy Farmer.
Sharon, Conn.		
BIGELOW, CARLE MUZZY.....	Appl. Sci.	Chief Efficiency Engineer, Cooley & Marvin Co., Accountants and Production Engineer.
513 Monadnock Building, Chicago, Illinois.		
CALDWELL, DOROTHY WALCOTT, Civ. Eng.		Assistant in Bacteriology, Experiment Station, R. I. S. C.
M. S., R. I. S. C., 1914.		
Kingston.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CLARKE, PHILIP HARRISON... 714 Chrisler Ave., Schnectady, N. Y.	Elec. Eng.	Industrial Control Engineer, General Electric Co.
COBB, ELECTRA HENRIETTA (MRS. JOHN L. SHERMAN), R. F. D. 147, Mansfield, Mass.	Home Econ.	At home.
DOLL, WALTER..... Greentown, Penn.	Mech. Eng.	Plant Superintendent, Advance Industrial Supply Co.
HENDERSON, ETHEL PIERCE (MRS. E. K. WILCOX)..... 34 Raymond St., New London, Conn.	Appl. Sci.	Instructor in Biology, Vocational High School.
KENYON, ANNIE ELIZA (MRS. S. C. WEBSTER, JR.)... North Easton, Mass.	Appl. Sci.	At home.
LARKIN, CHARLES HERBERT.... 56 Bower St., West Medford, Mass.	Civ. Eng.	Engineer, with Commission of Inquiry into Railways and Transportation, Canadian Government.
NUTTING, BERTHA MAY.... 421 Wilkesbarre Ave. Lackawanna, N. Y.	Home Econ.	Director, Domestic Science Dept., Lackawanna Social Center.
PATTERSON, ARTHUR JACOB... 758 Quebec Place, N. W., Washington, D. C.	Elec. Eng.	Signal Engineer, Interstate Commerce Commission, Division of Valuation.
RICHMOND, FRED ALLEN..... 147 Hawthorne Ave., Yonkers, N. Y.	Elec. Eng.	Assistant in Testing Dept., N. Y. Central Railroad Co.
SHERMAN, GEORGE WM., JR., M. S., Purdue Univ., 1914. 116 Shertz St. West Lafayette, Ind.	Elec. Eng.	Instructor in Physics, Purdue University.
*SLATER ALLAE CORDELIA (MRS. ARTHUR J. MINOR) Home Econ.		
WARNER, DAVID EDMOND, JR..... Storrs, Conn.	Agr.	Instructor in Poultry Husbandry.
WEBSTER, SAMUEL C., JR..... North Easton, Mass.	Agr.	Instructor, Vocational Agriculture.
WHALEN, WILLIAM JOSEPH... Kingston.	Appl. Sci.	Supt. of Buildings, R. I. S. C.

1913

ALEXANDER RALPH IRWIN... 2 Forest Ave., Orono, Maine.	Mech. Eng.	Instructor in Mechanical Engineering, Univ. of Maine.
BATES, REUBEN CHARLES..... 36 Browne St., Brookline, Mass.	Civ. Eng.	Teacher, Longwood Day School.

* Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BRETT, CLARENCE ELMER..... 36 Hoagland Ave., Dover, N. J.	Agr.	Farmer.
BRIDEN, FRANK HAROLD.... Port Hope, Ontario, Canada.	Mech. Eng.	Supt. Dominion Works, Nicholson File Co.
COHEN, BENJAMIN..... Room 404, Gray Apartments, Wilkinsburg, Pa.	Elec. Eng.	Correspondent and Employment Agent, Westinghouse Electric & Mfg. Co.
CONGDON, ESTHER LOOMIS (MRS. ARTHUR L. REYNOLDS), South Manchester, Conn.	Home Econ.	At home.
CORR, JOHN WILLIAM..... East Greenwich.	Appl. Sci.	Assistant Superintendent, Greenwich Bleachery.
ELKINS, DOROTHY DEARBORN, 10 Moody St., Amesbury, Mass.	Home Econ.	At home.
ELKINS, MARGUERITE WHITE, M. S., R. I. S. C., 1914. Kingston.	Home Econ.	Assistant in Biology, Agricultural Experiment Station.
HART, CRAWFORD PECKHAM..... Lakeville, Conn.	Agr.	Instructor in Agriculture and Farm Manager, Riggs School.
IRONS, WALTER COLWELL..... Kingston.	Agr.	Assistant in Agronomy, Agricultural Experiment Station.
KYLE, THOMAS Balboa, Canal Zone.	Agr.	Plumber.
MITCHELL, IRVING CALVARY... Greenville.	Appl. Sci.	Supt. of Schools, towns of Gloucester and Smithfield.
REDDING, WILLIAM FRANCIS... Caminio Nerevo, Mayaguez, Porto Rico.	Elec. Eng.	Instructor, Mech. Eng., University of Porto Rico.
REINER, WALDO..... 45 Strong Place, Brooklyn, N. Y.	Civ. Eng.	Turner Construction Co., 11 Broadway, New York City.
REYNOLDS, ARTHUR LESLIE... South Manchester, Conn.	Elec. Eng.	Teacher, Physics, High School.
SLOCUM, GEORGE EDWIN..... 1968 East 70th St., Cleveland, Ohio.	Elec. Eng.	Sales Engineer, Allen-Bradley Co.
*STECK, FRANK TURNER, WALTER RAYMOND... 22 Manchester St., Pawtucket.	Chem. Eng. Appl. Sci.	Industrial Engineer.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILCOX, ERROLL KENYON..... 34 Raymond St. New London, Conn.	Civ. Eng	Instructor in Mathematics, Vocational High School.
WOOD, SUSIE STANTON..... Slocums.	Home Econ.	Student Dietitian, Pennsylvania Hospital, Eighth and Spence Sts., Philadelphia, Pa.
YOUNG, JAMES HANNIBAL.... 2005 Broad St., Providence.	Appl. Sci.	With Baker, Ayling & Young, Investment Bankers.

1914

ALDRED, JAMES HILTON..... Ashton.	Mech. Eng.	With the Worthington Hydraulic Works, Harrison, N. J.
ANDERSON, WILLIAM EDWARD..... 3237-R St., Lincoln, Nebraska.	Agr.	Graduate Student, Dairy and Agr. Chem. Depts., Univ. of Nebraska.
ASPINWALL, FREDERICK OTTO 637 Main St., Pawtucket.	Chem. Eng.	Asst. Chemical Engineer, Inspection Dept. of Factory, Mutual Insurance Cos., 31 Milk St., Boston, Mass.
BAXTER, FRANK HOWARD.... 138 E. 38th St., New York City, N. Y.	Mech. Eng.	With A. Wimpfheimer & Bro., Fourth Ave., New York City.
BENSON, ROBERT JOHN..... 5882 Julian Ave., St. Louis, Mo.	Elec. Eng.	Electrical Maintenance and Construction Engineer, Wagner Elec. Mfg. Co.
BOULESTER, EDWARD JAMES... 617 Academy Ave., Providence.	Appl. Sci.	Chemist, Charles S. Tanner Co.
BROWNING, HAROLD WILLIAM.. M. S., Univ. of Wisconsin, 1916. Biology Building, Univ. of Wisconsin, Madison, Wisconsin.	Appl. Sci.	Fellow in Botany, University of Wisconsin.
CONNOR, THOMAS ROWLEY.... Peace Dale.	Civ. Eng.	In Maintenance Dept., N. Y., N. H. & H. R. R. Co.
DAVIS, HENRY ELLIS..... Providence.	Agr.	Asst. Mgr., R. I. Branch American Surety Cos., 936 Grosvenor Bldg., Providence.
ESTY, JAMES RUSSELL..... M. S., Brown University, 1915. 115 Waterman St., Providence.	Chem. Eng.	Graduate Student, Brown University, Milk Bacterologist, Providence Health Department.
FINCH, MYRON WHITMARSH..... 81 Blackamore Ave., Eden Park.	Agr.	Assistant Physical Director, Providence Y. M. C. A.
FORD, HELEN WHEELER.... 4 North State St., Concord, N. H.	Home Econ.	Teacher of Domestic Science, High School.
HAWKINS, MYRON ANGELL..... R. F. D., Oaklawn.	Agr.	Farm Manager for J. F. Comstock.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JONES, CARLTON WALTER..... 65 Laura St., Providence.	Civ. Eng.	With Glenlyon Dye Works, Saylesville.
KARMANN, HERMAN HARRY... 160 Dudley St., Providence.	Civ. Eng.	Surveyor, City Engineer's Office.
KINNEY, LORENZO FOSTER.... Dundee, Illinois.	Appl. Sci.	With D. Hill Nursery Co.
REINER, FRIEDA..... 45 Strong Place, Brooklyn, N. Y.	Home Econ.	Assistant Professor, Home Econ- omics Department, New Hamp- shire State College.
REINER, HERBERT Portsmouth, N. H.	Agr.	With American Agricultural Chemical Co., 92 State St., Bos- ton.
ROSSI, LOUIS..... 139 Tower St., Westerly.	Civ. Eng.	Civil Engineer and Draftsman.
SAFFORD, EDITH MARIE..... (MRS. HERBERT REINER) Portsmouth, N. H.	Home Econ.	At home.
SULLIVAN, JOHN LEO..... 20 Maple St., Milford, Conn.	Mech. Eng.	Teacher High School, Bridgeport, Conn.
TULLY, WILLIAM HENRY..... Wakefield.	Appl. Sci.	
TURNER, HARVEY ROBERT..... 137 East Manning St., Providence.	Civ. Eng.	
WEBB, WILLIAM HARRY..... 283 Ryerson St., Brooklyn, N. Y.	Elec. Eng.	Engineer, Moody Engineering Co., 115 Broadway, New York.
WEBSTER, EARL CLIFTON..... 67 Daboll St., Providence.	Civ. Eng.	Teacher.

1915

BALDWIN, GEORGE HOLLAND..... Kingston.	Agr.	Agronomy Demonstrator, Ex- tension Service, R. I. S. C.
BARNEY, RAYMOND LIVINGSTON, Homer, Minnesota.	Appl. Sci.	Scientific Assistant, U. S. Fish- eries Biological Station.
BELFIT, ROBERT WILLIAM... 292 North St., Pittsfield, Mass.	Chem. Eng.	Chemical Engineer, General Elec- tric Co.
BORDEN, NORMAN HARRISON, 2703 11th St., N. W., Washington, D. C.	Chem. Eng.	Junior Chemist, Insecticide, and Fungicide Lab. Bureau of Chemistry.
BRECHIN, JOHN..... Bristol.	Mech. Eng.	
BROWNELL, KENNETH ALLEN, 700 Main St., Pawtucket.	Chem. Eng.	Chemist, River Spinning Co., Val- ley Falls.
COLEMAN, CARL LAFAYETTE..... New London, N. H.	Agr.	Manager, Poultry Plant on Mrs. J. J. Tracy's Estate.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
DODGE, WILLIAM EARL..... 28 Portland St., Providence.	Civ. Eng.	Civil Engineer, Providence Water Supply Board, Scituate Reservoir Project.
GATES, CURTIS WOLCOTT.... 215 West 23d St., New York City, N. Y.	Chem. Eng.	Advertising Dept. American Magazine.
HALL, CARLISLE	Agr.	
187 Althea St., Providence.		
HARDING, ADA LAPLACE.... Walpole, N. H.	Home Econ.	Instructor, High School.
HARRIS, LEON IRVING..... 465 Lycaste Ave., Detroit, Mich.	Elec. Eng.	With Chalmers Motor Co.
HUDSON, ROYAL, CARLTON.... 34 Mumford St., Phenix.	Appl. Sci.	Student, Harvard Medical School.
HUNTER, ALBERT CLAYTON.... 54 Fourth St., East Providence.	Appl. Sci.	Graduate Student, Brown University.
JACKOWITZ, JOHN LOUIS..... 269 Martin St., East Providence.	Appl. Sci.	Instructor in Science and Athletic Coach, East Providence High School.
KEITH, LAWRENCE FULLER..... Marlow, Oklahoma.	Agr.	Oil Broker.
KIVLIN, ALFRED PATRICK..... 43 School St., North Attleboro, Mass.	Elec. Eng.	Appraisal Engineer, with N. J. State Board of Public Utility Commissioners, Newark, N. J.
LENNOX, FRANK JOSEPH.... 916 Beacon St., Boston, Mass.	Chem. Eng.	Graduate Student, Massachusetts Institute of Technology.
MEADE, JOHN EDWARD..... 160 Broad St., Providence.	Civ. Eng.	Civil Engineer, with N. Y., N. H. & H. R. R. Co.
MILLER, WESLEY CLIFTON.... 70 Kingston St., Rochester, N. Y.	Elec. Eng.	Asst. Chief Engineer, Bridgeford Machine Tool Works.
NICHOLS, JOSEPH ELTON.... Detroit, Mich.	Mech. Eng.	With Saxon Motor Co.
NORDQUIST, HARRY O. VALDIMAR,	Civ. Eng.	Field Office, Providence Water Supply Board.
83 Hamlin St., Providence.		
PARKER, RALPH LANGLEY	Agr.	Graduate Student, Brown University
39 Benovelent St., Providence.		
WATSON, ADELAIDE GILBERT. (MRS. FRANK H. BRIDEN)	Home Econ.	At home.
Ontario, Canada.		
WHITTAKER, LEROY ALLEN Box 13, Cape Cottage, Maine.	Elec. Eng.	Corporal, Coast Artillery Corps.
WILCOX, HAROLD CLAYTON..... Providence.	Agr.	Graduate Student, Brown University.

1916

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALDRICH, DANIEL GASKILL.....	Agr.	Instructor in Science, Coe's Northwood Academy.
Northwood Center, N. H.		
BECKER, WILLIAM JOSEPH, JR.,		In Construction Dept., Butterworth-Judson Corporation, New
Mech. Eng.		ark, N. J.
215 So. Van Dien Ave.,		
Ridgewood, N. J.		
BURR, DOROTHY ISABELLE..	Home Econ.	Teacher Domestic Science, High
145 Prospect St.,		School.
Franklin, N. H.		
CARLETON, EVERETT AUGUSTUS.....	Agr.	Assistant to Director of Sanitary
770 Main St.,		Research, Mass. Institute of
Greenwood, Mass.		Technology.
CHANTLER, AMBROSE ROYLE	Chem. Eng.	Chemist, U. S. Finishing Co.,
72 Olive St., Pawtucket.		Providence.
CONYERS, CLARENCE JOHN.....	Agr.	Farmer with Joseph Campbell
Riverton, N. J.		Co.
CORDIN, GILBERT RALPH.....	Chem. Eng.	Vice-President, New England
16 Harvard Ave., Providence.		Hosiery Co.
CURRAN, EMILE MAY.....	Home Econ.	At home.
(Mrs. NORMAN H. BORDEN),		
2703 Eleventh St., N. W.,		
Washington, D. C.		
DANIELS, HENRY FALES.....	Civ. Eng.	Assistant, City Engineering Dept.,
113 Barton St.,		Pawtucket.
Pawtucket.		
FARON, FRANCIS ALOYSIUS....	Elec. Eng.	Student Engineer, General Electric
213 Seward Place,		Company.
Schenectady, N. Y.		
FIELD, ERNEST GEORGE.....	Mech. Eng.	Assistant Dispatcher, Curtiss
116 Plymouth Ave.,		Aeroplane Co.
Buffalo, N. Y.		
FINE, SOLOMON	Appl. Sci.	Graduate Student, R. I. S. C.
Kingston.		
FRASER, DEAN BLENUS.....	Civ. Eng.	With Turner Construction Co.,
37 West Elm St.,		New York City.
Brockton, Mass.		
FREEMAN, THOMAS WILLIAM..	Civ. Eng.	Civil Engineer, with N. Y., N. H.
921 Howard Ave.,		& H. R. R. Co.
New Haven, Conn.		
GLASHEEN, RALPH EARLE.....	Civ. Eng.	Inspector, Maintenance of Way
921 Howard Ave.,		Dept., N. Y., N. H. & H. R. R.
New Haven, Conn.		Co.
HANLIN, WILLIAM FRANK.....	Agr.	With Builders Iron Works.
25 Lincoln Ave., Arlington.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HENRY, JAMES MURRAY.....	Mech. Eng.	With Electric Boat Company Stonington, Conn. Groton, Conn.
HOLLEY, LEONARD STANLEY.....	Agr.	Farmer. Wakefield.
HOXSIE, ANNIE SARAH....	Home Econ.	Teacher of Domestic Science and Somerset, Mass. Art, High School.
KELLY, HENRY CLINTON.....	Civ. Eng.	Civil Engineer, N. Y., N. H. & New Haven, Conn. H. R. R. Co.
LAGERSTADT, SETH FREDERICK HADLEY		The Crystal Poultry Farm.
Crystal, N. H.	Agr.	
LEWIS, WILLIAM EMANUEL.....	Agr.	With Adams Company Green- 778 Chestnut St., houses. Springfield, Mass.
LLOYD, LESTER WILLIAM.....	Agr.	Instructor in Agriculture, Bristol Segregansett, Mass. County Agricultural School.
LUSSIER, GEORGE EMILE.....	Elec. Eng.	Graduate Student, Westinghouse 423 Rebecca Ave., Elec. & Mfg. Co., East Pitts- Wilkesburg, Pa. burg Works.
MCLEOD, LEANDER WALLACE,	Mech. Eng.	With Providence Telephone Co., Providence Traffic Depart.
MEDBERY, HENRY EDMUND..	Appl. Sci.	Dairy Bacteriologist with H. P. Suite 6, 613 Columbus Ave., Hood & Sons. Boston, Mass.
MEEARS, ETTA ELIZABETH..	Home Econ.	Assistant Dietitian, Providence 136 Prairie Ave. District Nursing Association, Providence. 109 Washington St.
MILNES, CHARLES IRVING....	Chem. Eng.	Chemist, General Electric Co.
46 Mall St., West Lynn, Mass.		
PALMER, THEODORE ANDREW.....	Agr.	Instructor in Agriculture, Riggs Lakeville Conn. School.
PARKER, CLARENCE HOWARD..	Mech. Eng.	With B. F. Sturtevant Mfg. Co.
Hyde Park, Mass.		
PRICE, MILTON HARRIS.....	Agr.	Assistant Farm Manager.
Howard.		
RANDALL, BERTHA ADELAIDE.	Home Econ.	At home.
556 Cranston St., Providence.		
RANDALL, PHINEAS MUNSELL	Elec. Eng.	Testing Dept., General Electric Schenectady, N. Y. Company.
ROWELL, HOMER RANSOM.....	Agr.	Graduate Student, Cornell Univer- 108 Parker St., sity. Ithaca, N. Y.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SEIFERT, CHARLES EDWARD.... 423 Rebecca Ave., Wilkinsburg, Pa.	Elec. Eng.	Apprentice, Westinghouse Mfg. Co.
SHORT, CARLETON WEBB.... 56 John St., East Providence.	Chem. Eng.	Graduate Student, Brown Univer- sity.
VICTORY, THOMAS FRANCIS... Warren.	Elec. Eng.	With General Electric Co., Lynn, Mass.
WALMSLEY, EARL 74 Olive St., Pawtucket.	Chem. Eng.	With Jenckes Spinning Co.
YOUNG, VINCENT CASE..... Hyde Park, Mass.	Mech. Eng.	With B. F. Sturtevant Mfg. Co.

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Assistant Professor of Mathematics

JAMES BALDWIN,
Physical Director

ALTA MAY BAILEY, A. B.,
Head of Women's Dormitory and Instructor in Physical Training for Women

MABEL DEWITT ELDRED, B. S.,
Instructor in Drawing

RHODE ISLAND STATE COLLEGE.

JOHN RALEIGH ELDRED, B. S.,
Instructor in Mechanical Engineering

FLORENCE H. MYRICK, B. S.,
Instructor in Languages

FREDERICK JOSEPH GODIN, B. S.,
Instructor in Horticulture

HELEN ELIZABETH PECK, A. B.,
Librarian and Instructor in English

EDWARD HENRY PERKINS, B. S.,
Instructor in Chemistry and Geology

*PAUL EDWARD CORRIVEAU, A. M.,
Instructor in Horticulture

LAURA ANDERSON, B. S.,
Instructor in Domestic Art

THEODORE ANDREW PALMER, B. S.
Instructor in Animal Husbandry

DAVID STONE WHEELER, A. B.,
Vocational Adviser

HENRY B. POTTER, M. D.,
College Physician

LUCY COMINS TUCKER,
Registrar and Secretary to the President

AUGUSTUS BOSS DAVIS, JR.,
Bursar

WILLIAM JOSEPH WHELAN, B. S.,
Superintendent of Buildings

*On leave of absence for military service.

EXPERIMENT STATION STAFF

HOWARD EDWARDS, A. M., LL. D.....	} President of the College } <i>Ex-officio</i> Member
BURT L. HARTWELL, Ph. D., Director.....	Agronomy, Chemistry
PHILIP B. HADLEY, Ph. D.....	Animal Breeding and Pathology
P. H. WESSELS, M. S.....	Associate, Chemistry
F. R. PEMBER, M. S.....	Associate, Glasshouse Experiments
S. C. DAMON, B. S.....	Assistant, Field Experiments
G. E. MERKLE, B. S.....	Assistant, Chemistry
L. P. HOWARD, B. S.....	Assistant, Chemistry
DOROTHY W. CALDWELL, M. S.....	Assistant, Animal Breeding and Pathology
MARGUERITE W. ELKINS, M. S.....	Assistant, Animal Breeding and Pathology
NATHANIEL HELME	Meteorologist

Department of Extension Service

ANDREW EDWARD STENE, M. S.,

Director and State Leader in County Agent Work

ERNEST KINSEY THOMAS.....	*State Leader in Club Work
MRS. MABELLE ALICE FRAZEE, A. M....	‡Assistant State Leader in Club Work
DANIEL JOSEPH LAMBERT.....	*Agent in Poultry Husbandry
GEORGE HOLLAND BALDWIN, B. S.....	‡Assistant County Agent at Large
ROY BRISTOL COOLEY, B. S. A.....	†Agent in Dairying
GLADYS LOUISE MELOCHE, B. S.....	*State Leader in Home Economics
ADA LAPLACE HARDING, B. S....	‡(County) Emergency Home Demonstrator
ANNIE SARAH HOXSIE, B. S.....	*(County) Home Demonstration Agent
ELIZABETH HOPE BROWNE, B. S.....	‡(City) Emergency Home Demonstrator
GRACE LILLIAN RIECKEL, B. S.....	‡(City) Emergency Home Demonstrator
MARJORIE W. CHACE.....	§Assistant Emergency Demonstration Agent
FREDERICK GRANVILLE COMINS.....	§County Agent, Southern R. I. District
RAYMOND DOUGLAS TAYLOR, B. S....	§Assistant County Agent, R. I. District
ELWIN HENRY FORRISTALL, M. Sc.....	§County Agent, Providence District
HOWARD ALEXANDER MACRAE...	§Assistant County Agent, Providence District
LESTER WILLIAM LLOYD, B. S.....	§County Agent, Newport District

*In coöperation with United States Department of Agriculture.

†In coöperation with United States Department of Agriculture and State Board of Agriculture.

‡Salary and travelling expenses paid from emergency funds of United States Department of Agriculture.

§In coöperation with the United States Department of Agriculture and Farm Bureaus.

Office Assistants**Executive Office**

DOROTHY CLARKE WATSON	Bookkeeper
VERA MAY WATSON	Bookkeeper
FLORENCE ROLLINSON	Bookkeeper

Experiment Station

M. ALICE KIMBALL.....	Stenographer and Accountant
H. ALIDA BIRCH.....	Librarian and Stenographer

Extension Service

JESSIE MAY VROOM	Clerk
MARGARET ARMSTRONG WILCOX	*Stenographer
GRACE FLORENCE READ	*Stenographer
LUCY HUMPHREY YOUNG	*Filing Clerk

*In coöperation with United States Department of Agriculture.

COLLEGE CALENDAR

Monday, September 30, 1918,

Examination of Entering and Conditioned Students, 9 A. M.

Tuesday, October 1.....Registration, 9 A. M.

Wednesday, October 2.....Recitations Begin, 8:10 A. M.

Saturday, October 12.....Holiday, Columbus Day

Monday, October 14.....Short Course First Term Begins

Wednesday, November 27, 12 M. }

Monday, December 2, 8:10 A. M. }Thanksgiving Recess

Saturday, December 21, 12 M. }

Thursday, January 2, 1919, 1 P. M. }Christmas Recess

Saturday, January 18.....Short Course First Term Ends

Monday, January 20.....Short Course Second Term Begins

Friday, February 1, 4:35 P. M.....First Term Ends

Monday, February 10.....Second Term Begins

Registration, 9 A. M.

Tuesday, February 11.....Recitations Begin 8:10 A. M.

Tuesday to Friday, February 4, 5, 6, 7.....Farmers' Week

Saturday, February 22, holiday.....Washington's Birthday

Saturday, April 12.....Short Course Second Term Ends

Wednesday, April 16, 4:35 P. M. }

Tuesday, April 22, 1 P. M. }Easter Recess

Friday, May 9, holiday.....Arbor Day

Saturday, May 10.....Interscholastic Field Meet

Friday, May 30, holiday.....Memorial Day

Sunday, June 15.....Baccalaureate Address

Tuesday, June 17.....Commencement Exercises

NOTE.—On account of public conditions at time of publication, this calendar and other catalog announcements are liable to change, notice of which will be given.

RHODE ISLAND STATE COLLEGE

Foundation

The college is one of the so-called land-grant colleges. Of the purpose of these institutions Senator Morrill, the author of the national legislation which brought them into existence in all the states, says:

"The fundamental idea was to offer an opportunity in every state for a liberal and larger education to large numbers, not merely those destined to sedentary professions, but to those needing higher instruction for the world's business, for the industrial pursuits and professions of life." Again he says: "It was to give a chance to the industrial classes of the country to obtain a liberal education, something more than what was bestowed by our universities and colleges in general, which seemed to be based more on the English plan of giving education only to what might be called the professional classes, in law, medicine, and theology."

The college has also a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows:

(1) The interest on \$50,000, which was the net amount received by the State from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.

(2) The annual appropriation of \$15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.

(3) The annual appropriation of \$25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as follows: "To be applied only to instruction in agriculture, the

mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the State under the Adams Act of 1906, yielding each year \$15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting yearly to \$25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The funds coming from the general government to the State under the Smith-Lever Act of 1914, amounting yearly to \$10,000. This fund is exclusively for extension work in agriculture and home economics.

(7) The annual maintenance fund from the State, of \$40,000, used for all the purposes for which the funds of the general government cannot be used: *e. g.*, for executive and administrative work; for heating, lighting, and maintenance of buildings; for the teaching of modern languages other than English; for the teaching of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroly revised during the years 1906-07 and 1907-08. The course in home economics for young women was introduced in 1908.

Object and Organization

The function of Rhode Island State College is to aid in fostering the agricultural, industrial, and home-making life of the State. This it does in three ways: 1. by the investigation and discovery of new truths more or less directly applicable in agriculture and the industries; 2. by the direct distribution of information to the people; 3. by the organization and administration of definite courses of instruction designed to fit young men and young women for effective work in the vocational pursuits.

The first of these duties is performed by the

Experiment Station

for a description of the work of which the reader is referred to the report of the director, included in the report of the Board of Managers for the current year. A statement of its staff organization may be found on page 7 of this catalog.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all who desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, a

College Extension Department

has been organized, and is in active operation.

The purpose of this department is to carry the instruction of the college to those who cannot come to it for study. Whenever necessary and possible, visits will be made to any part of the State to examine farms, orchards, and gardens; to identify injurious insects or plant diseases, or give instruction in regard to methods of treatment; or to examine soils with a view to suggesting remedies for lack of fertility. General plans for laying out farms and for carrying out the details of any farm operation will be given the fullest consideration. The college is available for consultation at any time in regard to any problem of the farm, garden, or orchard. The fullest correspondence is invited, and conscientious consideration will be given to every letter received. In conjunction with this phase of the work, popular bulletins are issued from time to time, which endeavor to present the gist of agricultural information on various topics without the uninteresting detail which the usual experiment station bulletins must often include.

Whenever possible, arrangements will be made for demonstrations or lectures by members of the college faculty and experiment station staff when called for by any agricultural meeting or neighborhood gathering. A number of lectures of various subjects has been prepared, which can be secured on short notice by any gathering or organization within the State. These lectures are free, the only charge being the traveling expenses of the speaker. A complete list of the lectures, together with such other information in regard to them as may be of interest, has been prepared and may be obtained by sending a postal-card request to the department.

Eventually an important part of the extension work will be the encouragement of home study thru correspondence courses and study clubs supervised by the college. For the present, time and funds will not permit an adequate development of this project except in one or two lines, but advice will be given to any person wishing to take up home study, regarding courses of reading, books, and other literature which may be necessary in connection with such work.

In coöperation with the United States Department of Agriculture, the extension service of the college is now able to offer a system of club work originated by the Federal Department, thru which boys and girls can take up definite agricultural projects in their homes and carry them to a successful conclusion. These projects include poultry keeping, orcharding, home or school gardening, corn growing, potato growing, dairy herd records, canning of fruit and vegetables, baking, sewing, etc.

In coöperation with the Federal Department also, an extension instructor in farm management and in agricultural organization has been engaged, whose work is to aid farmers in planning their farms and in forming coöperative organizations. During the year three county agents have begun their work, one in the southern Rhode Island district, one in the Providence District, and one in the Newport District.

Another extension instructor has been engaged to conduct demonstrations in agronomy in different sections of the State, the purpose of which is to show the best methods of growing crops now common in the State or to make the farmers familiar with new kinds or varieties which may be of value in Rhode Island.

Home economics is receiving attention thru extension instructors who devote their attention to study clubs, lectures, correspondence, and demonstrations which have for their purpose giving information to the housewives of the State.

Further notes in regard to this work are given in leaflets and circulars issued by the extension department, and correspondence from any one who may be interested therein is invited. This information can be secured by sending an inquiry to the department.

Engineering Extension Work

In the engineering department, as well as in the other branches of the college, the endeavor is to be of the greatest possible service to

the people of the State, not only in the matter of providing formal instruction to students coming to the college, but also in giving help and information to those outside the college enrollment who are desirous of extending their technical knowledge, and to whom, for one reason or another, a regular college course is impossible.

To this end there has been offered in the past a short course of two years' duration, in which instruction has been given in the elements of engineering. Experience, however, has shown that those most eager to avail themselves of this kind of instruction, and those who would be most helped by it, are unable to leave their regular duties to attend classes at the college.

As a consequence, the short course work in engineering at the college has been discontinued, and in its place has been inaugurated the plan of extension work in engineering. Instead of taking the man away from his regular duties to bring him to the work, the present plan is to carry the work to the man.

This extension work is carried out in two chief ways,—by means of separate lectures on specific topics, and by means of progressive study in organized classes. The subjects presented are all of a technical character and are adapted to the particular needs and capabilities of the classes.

The present requirements for such class work are that a suitable place for meeting be provided, and that the attendance be regular. This regularity of attendance is a matter of the greatest importance, since without it little or no progress is possible.

Classes have been conducted in various places in The Use of the Slide Rule, Mechanism and Shop Calculations, Power Plant Computations, etc. Instruction in these and any other desired branch of engineering may be had by citizens of the State by complying with the requirements mentioned, the number of such courses being limited only by the available time of the members of the department. Also lecturers will be provided to present various phases of engineering before technical organizations and engineering societies.

The College as an Educational Agency

In its third form of activity, the purpose and work of Rhode Island State College is to give college training and culture to young

men and young women, not in spite of, but thru and with, vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroly efficient worker.

I. THE FOUR-YEAR COURSES

To this end certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in mathematics, pure and applied; the English language as a means of intercommunication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses, moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-winning, but also preparation for citizenship, for moral and social life, have intertwined with the vocational work and study, previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology, and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools. They thus become an integral part of the school system of the State. Young men and young women, citizens of the State and having requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are the agricultural course, the engineering course, the vocational course in applied science, and the course in home economics.

The Agricultural Course

The agricultural course is intended to give thoro preparation for taking charge of and operating a piece of landed property. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thoro study of the sciences bearing directly on such work, viz: botany, chemistry, geology, zoölogy, anatomy, physics, bacteriology, and entomology. In addition, it embraces the culture and mental discipline arising from the study of mathematics, English composition and rhetoric, history, drawing, modern languages, economics, and English literature. The course is planned to give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first and second years; in the second half of the junior year, in addition to the required work for all students in the course, two optional lines of work are offered, one of which must be selected by the student and followed until graduation. The two lines offered are horticulture and animal husbandry. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. Beginning with the class of 1919, all candidates for a degree in the agricultural course shall be required to have spent at least six months in practical farm work before the degree shall be granted. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I ₁ —Rhetoric and Composition..	3	English I ₂ —Rhetoric and Composition..	3
Math. III—Algebra	2½	Chemistry II—General Chem. and Qualitative Analysis	3[1½]
Math. II—Trigonometry	2½	Botany I ₂ —General	1[2]
Chemistry I—General	2[1½]	An. Husb. I—Stock Judging.....	[2]
Botany I ₁ —General	1[2]	An. Husb. III—Breeds	2
Hort. I—Propagation of Plants.....	1[1]	Hort. II—Vegetable Gardening.....	2
Freehand Drawing II—Pencil.....	[1]	Hort. IV—Spraying and Pruning.....	1[1]
Psy. and Edu. VIII—How to Study...	½	Mil. Sci. and Tactics I ₂ —Drill.....	[1]
Mil. Sci. and Tactics I ₁ —Drill.....	[1]	Mil. Sci. and Tactics II ₂ —Theory.....	1
Mil. Sci. and Tactics II ₁ —Theory.....	1		

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation	2
English VIII—Interpretive Reading...	1	Chemistry XIV—Agricultural Chem-	
Chemistry IV—Organic Chemistry.....	3[1]	istry	4
Botany II—Botany of Crops and		Physics I—Descriptive Physics.....	5
Weeds	1[2]	Botany III ₂ —Trees and Shrubs.....	[1]
Botany III ₁ —Trees and Shrubs.....	[1]	Zoölogy X ₂ —Vertebrate Zoölogy.....	2[2]
Agronomy II—Forage Plants.....	2	Geology I	2
Zoölogy X ₁ —Vertebrate Zoölogy.....	2[2]	Mil. Sci. and Tactics I ₁ —Drill.....	[1]
Civil Engineering I—Surveying.....	[1]	Mil. Sci. and Tactics IV ₂ —Theory....	1
Mil. Sci. and Tactics I ₃ —Drill.....	[1]		
Mil. Sci. and Tactics IV ₁ —Theory.....	1		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IX—Debating	1	Agronomy IV—Farm Crops.....	3[1]
An. Husb. X—Vet. Practice.....	3	Agronomy VII—Farm Management....	2
An. Husb. XII ₁ —Poultry Culture.	1	History I—Industrial History.....	
Agron. III—Soils and Fertilizers.....	4[1½]	or	3
Hort. III—Fruit Culture	2	Mil. Sci. and Tactics V ₂ —Theory...	
Hort. XVI—Landscape Gardening....	1[2]	Mil. Sci. and Tactics I ₆ —Drill.....	
English IV—Modern Essays.....		or	1
or	3	Physical Training	
Mil. Sci. and Tactics V ₁ —Theory...		Options: A. or B.	
Mil. Sci. and Tactics I ₅ —Drill.....	[1]	All of the subjects in one of the	
or		following groups must be chosen.	
Physical Training		A. <i>Horticulture</i>	
		Botany IV—Forestry	[2]
		or	
		Hort. XVII—Small Fruits.....	2[1]
		Zoölogy IV—Economic Entomology....	3[1]
		Elective	3 or 4
		B. <i>Animal Husbandry</i>	
		An. Husb. VII—Dairy Practice.....	1[2]
		Agronomy VI—Farm Machinery.....	2[1]
		Elective	4

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	English V—Shakspeare	3
English X—Oratorical Writing and		Agronomy X—Agricultural Experimen-	
Extemporaneous Speaking	1	tation	3
An. Husb. VI—Feeds and Feeding....	3	Bacteriology I ₂ —General	1[2]
Agronomy XI—Plant Breeding.....	3	Mil. Sci. and Tactics VI ₂ —Theory...	
Bacteriology I ₁ —General	1[2]	or	3
Mil. Sci. and Tactics VI ₁ —Theory...		Elective	
or	3	Mil. Sci. and Tactics I ₉ —Drill.....	
Elective	3	or	1
Elective	3	Physical Training	
Mil. Sci. and Tactics I ₇ —Drill.....		Options: A. or B.	
or	1	All of the subjects in one of the fol-	
Physical Training		lowing groups must be chosen.	
Options: A. or B.		A. <i>Horticulture</i>	
A. <i>Horticulture</i>		Botany IV—Forestry	[2]
Hort. X—Pomology	1[2]	or	
B. <i>Animal Husbandry</i>		Hort. XVII—Small Fruits.....	2[1]
Elective	3	Elective	3 or 4
		B. <i>Animal Husbandry</i>	
		An. Husb. IV—Breeding	3
		Elective	3

The Engineering Course

The engineering course has the same duration and the same general plan as that usually offered in the standard technical colleges. Students will follow the course as laid down until the sophomore year, at which time they must elect one of the four optional lines offered, viz.: mechanical, electrical, civil, and chemical engineering. Any line of work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and efficient work in the great manufacturing and commercial industries of the state; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. The tabulated course follows:

Freshman Year

For the first year the course is the same for all students of engineering.

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I ₁ —Rhetoric and Composition.	3	English I ₂ —Rhetoric and Composition.	3
Math. I—Algebra	2½	Math. VIIa—Analytics	5
Math. II—Trigonometry	2½	Chemistry II—General Chemistry and	
Chemistry I—General	2[1½]	Qualitative Analysis	3[1½]
Mech. Eng. I—Mechanical Drawing...	[4]	Mech. Eng. V—Descriptive Geometry.	1[2]
Mech. Eng. II—Forge and Foundry...	[2]	Mech. Eng. III—Pattern Making....	[2]
Psy. and Ed. VIII—How to Study....	½	Mil. Sci. and Tactics I ₂ —Drill.....	[1]
Mil. Sci. and Tactics I ₁ —Drill.....	[1]	Mil. Sci. and Tactics II ₂ —Theory....	1
Mil. Sci. and Tactics II ₁ —Theory....	1		

MECHANICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation	2
English VIII—Interpretive Reading...	1	Physics II ₂ —General	4
Physics II ₁ —General	4	Physics III ₂ —Laboratory	[1½]
Physics III ₁ —Laboratory	[1½]	Math. XI—Calculus	5
Math. X—Calculus	5	Mech. Eng. VI ₂ —Mechanical Drawing.	[2]
Mech. Eng. VI ₁ —Mechanical Drawing.	[2]	Mech. Eng. XII—Mechanism.....	3
Civil Eng. I—Surveying	1[2]	Mil. Sci. and Tactics I ₂ —Drill.....	[1]
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Mil. Sci. and Tactics IV ₂ —Theory....	1
Mil. Sci. and Tactics IV ₁ —Theory....	1		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory....	1	Mil. Sci. and Tactics V ₂ —Theory....	3
English IX—Debating	3	Mech. Eng. IX ₂ —Heat Engineering....	1½
Mech. Eng. VIII—Machine Drafting..	3	Mech. Eng. X ₂ —Applied Mechanics....	3½
Mech. Eng. IX ₁ —Heat Engineering....	5	Mech. Eng. XI—Hydraulics	3
Mech. Eng. X ₁ —Applied Mechanics....	[3]	Mech. Eng. XIII—Valve Gears.....	[3]
Mech. Eng. XIV ₁ —Machine Shop.....	1[1]	Mech. Eng. XIV ₂ —Machine Shop.....	1[1]
Mech. Eng. XV—Experimental Engi- neering a	[1]	Mech. Eng. XVI—Experimental Engi- neering b	[1]
Mil. Sci. and Tactics I ₅ —Drill.....	[1]	Mil. Sci. and Tactics I ₆ —Drill.....	[1]
or		or	
Physical Training		Physical Training	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	Mech. Eng. XVIII—Experimental En- gineering d	[2]
English X—Oratorical Writing and Extemporaneous Speaking	1	Mech. Eng. XIX—Heating and Venti- lation	1
Mech. Eng. XVII—Experimental En- gineering c	2[1½]	Mech. Eng. XX ₂ —Machine Design....	[3]
Mech. Eng. XX ₁ —Machine Design....	[3]	Mech. Eng. XXII ₂ —Assigned Work..	3
Mech. Eng. XXI—Power Plants and Design	2[1]	or	
Mech. Eng. XXII ₁ —Assigned Work..	3	Mil. Sci. and Tactics VI ₂ —Theory..	2
or		Mech. Eng. XXIII—Dynamos of Machines	
Mil. Sci. and Tactics VI ₁ —Theory..	3	Mech. Eng. XXVI—Business Organi- zation and Management.....	3
Elec. Eng. I—Theory of Direct Cur- rents	3	Elec. Eng. IV—Theory of Alternating Currents	2
Mil. Sci. and Tactics I ₇ —Drill.....	[1]	Elec. Eng. II—Direct Current Labora- tory	[3]
or		Mil. Sci. and Tactics I ₈ —Drill.....	[1]
Physical Training		or	
		Physical Training	

ELECTRICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work	1	English III—Argumentation	2
English VIII—Interpretive Reading...	1	Physics II ₂ —General	4
Physics II ₁ —General	4	Physics III ₂ —Laboratory	[1½]
Physics III ₁ —Laboratory	[1½]	Math. XI—Calculus	5
Math. X—Calculus	5	Mech. Eng. VI ₂ —Mechanical Drawing..	[2]
Mech. Eng. VI ₁ —Mechanical Drawing..	[2]	Mech. Eng. VII—Machine Shop.....	[3]
Civ. Eng. I—Surveying	1[2]	Elec. Eng. IIIa—Prin. of Elec. Eng....	½
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Mil. Sci. and Tactics IV ₁ —Theory....	1	Mil. Sci. and Tactics IV ₂ —Theory....	1

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory....	1	Mil. Sci. and Tactics V ₂ —Theory....	[3]
English IX—Debating	3	Elec. Eng. II—Direct Current Lab....	2
Elec. Eng. I—Theory of Direct Cur- rents	1	Elec. Eng. IV—Theory of Alternating Currents	
Elec. Eng. IIb—Prin. of Elec. Eng....	[1½]	Mech. Eng. IX ₂ —Heat Engineering....	3
Physics V—Electrical Meas.....	1[1½]	Mech. Eng. X ₂ —App. Mechanics....	1½
Physics VI—Prin. of Illumination....	3	Mech. Eng. XI—Hydraulics	3½
Mech. Eng. IX ₁ —Heat Engineering....	5	Mech. Eng. XVI—Exp. Engineering b..	1[1]
Mech. Eng. X ₁ —App. Mechanics.....	[1]	Mil. Sci. and Tactics I ₆ —Drill.....	[1]
Mil. Sci. and Tactics I ₅ —Drill.....		or	
or		Physical Training	
Physical Training			

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	Elec. Eng. V ₂ —Theory of Alternating Currents	3
English X—Oratorical Writing and Ex-temporaneous Speaking	1	Elec. Eng. VI ₂ —Alt. Current Lab.	[3]
Elec. Eng. V ₁ —Theory of Alternating Currents	3	Elec. Eng. VII—Design of Electrical Machinery	[3]
Elec. Eng. VI ₁ —Alt. Current Laboratory	[3]	Elec. Eng. VIII—Telephone Engineering	1
Elec. Eng. XII ₁ —Assigned Work.....	[3]	Elec. Eng. X—Electric Power Transmission	4
or		Elec. Eng. XI—Electric Railways.....	2
Mil. Sci. and Tactics VI ₁ —Theory....	2[1½]	Elec. Eng. XII ₂ —Assigned Work.....	[3]
Mech. Eng. XVII—Experimental Engineering c		or	
Mech. Eng. XXI—Power Plants.....	2	Mil. Sci. and Tactics VI ₂ —Theory....	[1]
Mil. Sci. and Tactics I ₁ —Drill.....	[1]	Mil. Sci. and Tactics I ₂ —Drill.....	
or		Physical Training	
Physical Training			

CIVIL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation	2
English VIII—Interpretive Reading..	1	Physics II ₂ —General	4
Physics II ₁ —General	4	Physics III ₂ —Laboratory	[1½]
Physics III ₁ —Laboratory	[1½]	Math. XI—Calculus completed	5
Math. X—Calculus	5	Mech. Eng. VI ₂ —Mechanical Drawing..	[2]
Civil Eng. I—Surveying	1[2]	Mech. Eng. VII—Machine Shop.....	[1½]
Mech. Eng. VI ₁ —Mechanical Drawing..	[2]	Civil Eng. II—Topographic Surveying..	[1½]
Mil. Sci. and Tactics I ₂ —Drill.....	[1]	Mil. Sci. and Tactics I ₁ —Drill.....	[1]
Mil. Sci. and Tactics IV ₁ —Theory.....	1	Mil. Sci. and Tactics IV ₂ —Theory.....	1

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory....	1	Mil. Sci. and Tactics V ₂ —Theory....	3
English IX—Debating		Civil Eng. III ₂ —Railroad Engineering..	
Civil Eng. III ₁ —Railroad Engineering..	5	Civil Eng. V—Roads and Pavements..	3[1]
Civil Eng. IV—Graphic Statics	2	Mech. Eng. X ₂ —Applied Mechanics....	1½
Mech. Eng. X ₁ —Applied Mechanics....	5	Mech. Eng. XI—Hydraulics	3½
Mech. Eng. IX ₁ —Heat Engineering....	3	Mech. Eng. XVI—Experimental Engineering b	1[1]
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Geology I	2
or		Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Physical Training		or	
		Physical Training	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	Civil Eng. VIII—Bridge Design	[3]
English X—Oratorical Writing and Ex-temporaneous Speaking	1	Civil Eng. IX—Masonry	2[1]
Mech. Eng. XVII—Experimental Engineering c	2[1½]	Civil Eng. X—Reinforced Concrete....	2
Civil Eng. VI—Bridge Details.....	[2]	Civil Eng. XII—Water Supply.....	3
Civil Eng. VII—Bridge Analysis.....	2	Civil Eng. XIV—Contracts and Specifications	2
Civil Eng. XI—Sewerage.....	2	Elec. Eng. IV—Theory of Alternating Currents	2
Elec. Eng. I—Theory of Direct Currents	3	Civil Eng. XV ₂ —Assigned Work.....	3
Civil Eng. XV ₁ —Assigned Work.....	3	or	
or		Mil. Sci. and Tactics VI ₂	[1]
Mil. Sci. and Tactics VI ₁		Mil. Sci. and Tactics I ₃ —Drill.....	
Mil. Sci. and Tactics I ₁ —Drill.....	[1]	or	
or		Physical Training	
Physical Training			

CHEMICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work	1	English III—Argumentation	2
English VIII—Interpretive Reading....	1	German or French—Scientific	5
Physics II ₁ —General	4	Physics II ₂ —General	4
Physics III ₁ —Laboratory	[1½]	Physics III ₂ —Laboratory	[1½]
Math. X—Calculus	5	Math. XI—Calculus	5
Chemistry III—Qualitative Analysis....	[3]	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Mech. Eng. VI ₁ —Mechanical Drawing. [2]		Mil. Sci. and Tactics IV ₂ —Theory....	1
Mil. Sci. and Tactics I ₃ —Drill.....	[1]		
Mil. Sci. and Tactics IV ₁ —Theory....	1		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory....	1	Mil. Sci. and Tactics V ₂ —Theory....	1½
English IX—Debating	5	Mech. Eng. X ₂ —Applied Mechanics... 3½	
Mech. Eng. X ₁ —Applied Mechanics....	[3]	Mech. Eng. XI—Hydraulics	[5]
Chemistry VII—Quantitative Analysis. [4]		Chemistry VIII—Quantitative Analysis.	
Chemistry XVI—Industrial Chemistry. 4		Chemistry XII—Physical Chemistry. }	4
Chemistry IVa—Organic Chemistry....3[1½]		alternating with	
Mil. Sci. and Tactics I ₆ —Drill.....	[1]	Chemistry V—Organic Chemistry....	[3]
or		Chemistry VI—Organic Chemistry....	
Physical Training		Mil. Sci. and Tactics I ₆ —Drill.....	[1]
		or	
		Physical Training	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	Chem. XII—Physical Chemistry....	4
English X—Oratorical Writing and Ex-		or	
temporaneous Speaking	1	Chem. V—Organic Chemistry	
Elec. Eng. I—Theory of Direct Cur-	3	Chem. XX ₂ —Assigned Work.....	3
rents	3	or	
Mech. Eng. IX ₁ —Heat Engineering....	2[2]	Mil. Sci. and Tactics VI ₂ —Theory..	2
Chem. XVII—Industrial Chemistry....		Chem. XXI ₂ —Reports and Discussions.	1½
Chem. XX ₁ —Assigned Work.....	3	Mech. Eng. IX ₂ —Heat Engineering... 3	
or		Mech. Eng. XXVI—Indus. Organiza-	
Mil. Sci. and Tactics VI ₁ —Theory....	2	tion and Management	3
Chem. XXI ₁ —Reports and Discussions		Mech. Eng. XII—Mechanism	3
Mil. Sci. and Tactics I ₇ —Drill.....	[1]	Chem. XXII—Organic and Physical	[2]
or		Chemical Laboratory	
Physical Training		Mil. Sci. and Tactics I ₈ —Drill.....	[1]
		or	
		Physical Training	

Vocational Course in Applied Science

This course offers to the student opportunity to prepare either for teaching or for any one of several other distinct vocational pursuits, such as the application of botany, zoölogy, chemistry, and bacteriology to practical industrial problems. In these subjects, as well as in agriculture, the Vocational Science Course makes specialization possible. In addition, the course is so constructed that the student, although specializing, may come in touch with subjects

that possess wider cultural significance and insure that broader outlook upon life which should characterize the educated man.

The general plan of the course is to give primarily, a foundation in the sciences of chemistry, physics, and biology; also to give the student an acquaintance with history and literature and an efficient command of good English. The course offers, at the beginning of the Junior year, options in Agriculture, Biology, and Chemistry. One of these the student must select in addition to certain studies required of all. Opportunity either for further specialization within the option, or for gaining a broader training in unrelated studies is afforded thru a limited number of elective subjects.

The nature and aim of these several options are as follows:

THE AGRICULTURAL OPTION

This option combines the broad scientific training of the Vocational Science Course with the fundamental subjects given in the Agricultural Course. It thus affords a basis for investigational work in subjects related to agriculture.

With the introduction of agriculture into the secondary and grade schools, there was created a demand for teachers and superintendents who had received, in addition to work in the sciences and education, training in the broad field of agriculture. This option therefore furnishes preparation in those fundamental subjects in Agronomy, Animal Husbandry, and Horticulture which will enable the graduates from this course acceptably to fill positions as instructors and principals of agricultural high schools or as superintendents of schools in rural communities.

THE BIOLOGICAL OPTION

The Biological Option offers training in the applications of biological science to the problems of modern life. The great growth of agricultural investigation in recent years has created a demand for trained workers in applied biology. In the state experiment stations and the federal government bureaus, opportunities are offered for the investigation of problems in plant physiology and pathology, economic entomology, animal nutrition and animal pathology. State and federal inspection of plants and animals, and the problems of the control of plant and animal diseases offer other

call for workers trained in biological subjects. The scope of public hygiene and sanitation is increasing each year and has created a growing demand for trained workers in federal, state, and municipal health service. In addition, such students are well equipped to undertake graduate work in other institutions, or to begin the study of medicine.

THE CHEMICAL OPTION

The subjects in Chemistry are designed to train the student in theoretical and descriptive inorganic and organic chemistry; to give him a working knowledge of the various branches of chemical analysis; and to familiarize him with the practical applications of chemistry. The course is well adapted to prepare students for teaching, for experiment-station work, for graduate work in chemistry, or for positions in industries which involve chemical processes. Such industries include the bleaching and dyeing of cotton, silk and wool, the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, paper, soap, paint and varnish, the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion or by destructive distillation to form gas, coke and tar, embracing the entire field of forest-products industries. In addition the course is intended to prepare particularly for the more specialized chemical industries such as the manufacture of chemicals and the manufacture and application of dyestuffs.

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I ₁ —Rhetoric and Composition..	3	English I ₂ —Rhetoric and Composition.	3
German or French	3	German or French	3
Math. I—Algebra	2½	Math. VIIIb	4
Math. II—Trigonometry	2½	Chemistry II—General Chemistry and	
Chemistry I—General	2[1½]	Qualitative Analysis	3[1½]
Botany I ₁ —General	1[2]	Botany I ₂ —General	1[2]
Freehand Drawing II ₁ —Pencil.....	[1]	Freehand Drawing II ₂ —Pencil.....	[1]
Psy. and Ed. VIII—How to Study.....	½	Mil. Sci. and Tactics II ₂ —Theory... }	1
Mil. Sci. and Tactics II ₁ —Theory.....	1	or	
Mil. Sci. and Tactics I ₁ —Drill.....	[1]	Home Economics IIIb—Euthenics... }	[1]
or		Mil. Sci. and Tactics I ₂ —Drill.....	
Physical Training		or	
		Physical Training	

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work	1	English III—Argumentation	2
English VIII—Interpretive Reading....	1	French or German—Scientific	5
Chemistry IV—Organic	3[1]	Geology I	2
or		Zoology X ₂ —Vertebrate Zoölogy.....	2[2]
Chemistry III—Qualitative Analysis....	[3]	Physics II ₂ —General	4
Botany II—Botany of Crops and Weeds	1[2]	Physics III ₂ —Laboratory	1[1½]
Zoology X ₁ —Vertebrate Zoölogy.....	2[2]	Mil. Sci. and Tactics IV ₂ —Theory....	1
Physics II ₁ —General	4	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Physics III ₁ —Laboratory	1[½]	or	
Mil. Sci. and Tactics IV ₁ —Theory....	1	Physical Training	
Mil. Sci. and Tactics I ₃ —Drill.....	[1]		
or			
Physical Training			

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory....	1	Mil. Sci. and Tactics V ₂ —Theory....	3
English IX—Debating	1	Psy. and Ed. I—History of Education	3
Psy. and Ed. IV—General Psychology	3	alternating with	
alternating with		Psy. and Ed. III—Secondary Education	[1]
Psy. and Ed. II—Prin. of Education	[1]	Mil. Sci. and Tactics I ₆ —Drill.....	
Mil. Sci. and Tactics I ₅ —Drill.....		or	
or		Physical Training	
Physical Training		Options: A, B or C. All the sub-	
Options: A, B or C. All of the sub-		jects in one of the following groups	
must be chosen:		must be chosen:	
A. Agriculture.		A. Agriculture.	
Agronomy III—Soils	4[1½]	Agronomy IV—Farm Crops	3[1]
Horticulture I—Propagation of Plants..	1[1]	Zoölogy IV—Economic Entomology....	3[1]
Elective	3	Botany IV—Forestry	1[1]
B. Biology.		alternating with	
Zoölogy VIII—Histology and Embry-	2[3]	Horticulture IV—Spraying and Pruning	3
ology		Elective	
Botany V—Plant Histology	1[4]	B. Biology.	
Elective	3	Botany VI—Plant Pathology.....	1[4]
C. Chemistry.		Zoölogy I—Invertebrate Zoölogy.....	1[3]
Chemistry VII—Quantitative Analysis. [3]		or	
Chemistry IVa—Organic	3[1½]	Chemistry XIX—Physiological Chemis-	4
Chemistry XVI—Industrial Chemistry..	4	try	
		Elective	3
		C. Chemistry.	
		Chemistry VIII—Quantitative Analysis	[5]
		Chemistry VI—Organic Laboratory....	[3]
		Chemistry XII—Physical Chemistry..	4
		alternating with	
		Chemistry V—Advanced Organic....	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	English V—Shakspeare	3
English X—Oratorical Writing and Ex- temporaneous Speaking	1	Psy. and Ed. I—History of Education alternating with	3
Psy. and Ed. IV—General Psychology alternating with	3	Psy. and Ed. III—Secondary Education Mil. Sci. and Tactics I ₈ —Drill.....	3
Psy. and Ed. II—Prin. of Education. Mil. Sci. and Tactics VI ₁ —Theory..	3	or	
or		Elective	
Elective		Mil. Sci. and Tactics I ₈ —Theory...	[1]
Mil. Sci. and Tactics I ₇ —Drill.....		or	
or	[1]	Physical Training	
Physical Training		Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:	
Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:		A. <i>Agriculture.</i>	
A. <i>Agriculture.</i>		Horticulture II—Vegetable Gardening..	2
An. Hus. XIV—Poultry	[2]	Animal Husbandry IV—Breeding.....	3
Horticulture X—Pomology	3	Animal Husbandry VI—Feeding.....	3
Horticulture XVI—Landscape Garden- ing	1[2]	B. <i>Biology.</i>	
B. <i>Biology.</i>		Chemistry XIX—Physiological Chemis- try	4
Agronomy XI—Plant Breeding.....	3	or	
Assigned Biological Work.....	3	Zoölogy I—Invertebrate Zoölogy.....	1[3]
C. <i>Chemistry.</i>		Assigned Biological Work.....	3
Chemistry XVII—Industrial Chemistry.	4	Zoölogy II—General	1[1½]
Chemistry XXI ₁ —Reports and Discus- sions	2	C. <i>Chemistry.</i>	
Chemistry XX—Assigned Work.....	3	Chemistry V—Advanced Organic....	4
		alternating with	
		Chemistry XII—Physical	
		Chemistry XXI ₂ —Reports and Discus- sions	2
		Chemistry XXII—Organic and Physical Chemical Laboratory	[2]

The Course in Home Economics

The object of the home economics course is to fit young women for home making and to provide adequate training for teaching the various household arts. Nowhere is the application of modern science to everyday life more important than in the home. In no other life-work do women find greater need of scientific knowledge and technical skill than in the intelligent and economic administration of household affairs.

The course includes instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene; and instruction in the care of infants and young children. During one year instruction is given in hand sewing, machine practice, and in drafting, cutting, and making plain garments. Altho the main work is scientific and technical, the importance of artistic and literary training for home life has not been neglected. It is recognized that all the knowledge of right living is needed to assist the student to a broader conception of citizenship as well as in performing the manifold duties of daily life.

Special Fields Open to Home Economics Students

Opportunities are greater and more varied today for women trained in home economics than for those trained in any other one line. Besides teaching, which profession is chosen by many, there are excellent openings in institutional management, lunch-room and tea-room work which vary according to the type of institution selected. The demand for hospital dietitians is greater than can be met. There is also a growing demand on the part of the industries for trained women chemists. In view of this demand opportunity to take special courses in chemistry will be offered during the junior and senior years to approved students who wish to fit themselves for such work. Such preparation will qualify the student along the following lines: special research work on problems involving chemistry as applied to food and textile analysis, the use of dyes and mordants, federal and municipal inspection, analytical work in experiment stations and technical laboratories.

Regular students are expected to take the course as outlined below, with choice of electives; but when entered in other courses in the college they may elect certain work in the home economics department, under direction of the head of the department. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I ₁ —Rhetoric and Composition.	3	English I ₂ —Rhetoric and Composition.	3
Math. III—Algebra	2½	Chemistry II—General Chemistry and Qualitative Analysis	3[1½]
Math. II—Trigonometry	2½	Botany I ₂ —General	1[2]
Chemistry I—General Chemistry	2[1½]	Freehand Drawing II—Pencil	[2]
Botany I ₁ —General	1[2]	Freehand Drawing IV—Color Problems	[1]
Psy. and Ed. VIII—How to Study	½	Home Economics I ₂ —Garment Making	2[3]
Home Economics I ₁ —Garment Making	[3]	Home Economics XXIII—Textiles	[2]
Home Economics III—Hygiene	1	Physical Training	[1]
Physical Training	[1]		

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work	1	English III—Argumentation	2
English VIII—Interpretive Reading	1	German or French	3
German or French	3	Zoology X ₂ —Vertebrate	2[2]
Chemistry IV—Organic	3[1]	Physics I—Descriptive	5
Zoology X ₁ —Vertebrate	2[2]	Home Economics IV ₂ —Foods	[3]
Home Economics IV ₁ —Foods	[3]	Home Economics XXII—Millinery	[1]
Home Economics XVIII ₁ —Dress Making	[2]	Physical Training	[1]
Physical Training	[1]		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays	3	History I—Industrial History.....	3
English IX—Debating	1	Chemistry X—Food Analysis.....	4
Psy. and Ed. IV—General Psychology	3	alternating with	
Zoology VII—Histology and Embryology	2[3]	Chemistry XIX—Physiological Chem. }	2
Home Economics VIII—Dietetics.....	2[1]	Freehand Drawing III ₁ —History of Art	
Home Economics IX—Sanitation.....	2	Freehand Drawing VIII—Drawing.....	[1]
Freehand Drawing XI—Design.....	[1]	Home Economics VII—House Planning	1[1]
Physical Training	[1]	Home Economics XVIII ₂ —Dress Making	2[1]
		Home Economics XII—Home Nursing and Care of Children.....	2
		Physical Training	[1]
		Elective	2

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics	3	English V—Shakspeare	3
English X—Oratorical Writing and Extemporaneous Speaking	1	Home Economics VI—Nutrition.....	2[1]
Freehand Drawing III ₂ —History of Art	2	Home Economics XXVI—Textile and Clothing Economics	[1]
Home Economics XXV—Costume Design	[2]	Home Economics XIV—Assigned Work	1[1]
Home Economics XXI—Home Administration	1[2]	Bacteriology I ₂ —General	1[2]
Home Economics XV—Student Teaching	1[1]	Chemistry X—Food Analysis.....	[4]
Bacteriology I ₁ —General	1[2]	alternating with	
Physical Training	[1]	Chemistry XIX—Physiological Chem. }	[1]
Elective	3	Physical Training	
		Elective	3

II. SHORT OR SPECIAL COURSES IN DOMESTIC SCIENCE

Where the age and attainments of applicants seem to warrant it, special courses in domestic science for those unable for any cause to take the regular four-years' course will be arranged, so far as the resources of the college will permit. Applicants desiring such special courses should apply before August 15, so as to allow ample time for full correspondence and investigation before a final decision in the individual case is taken on the part of the college.

III. SHORT COURSE IN AGRICULTURE

To meet the needs of those who find it out of their power to undertake a four years' college course, but who, nevertheless, desire to increase their efficiency on the farm, the college offers what is known as a short course in agriculture. Students may with advantage take only a part of the course if unable to remain for the whole time.

It is required of applicants for this course that they be at least eighteen years of age at entrance, that they shall have completed at least the common school, that they shall have a definite purpose in mind in applying for the course, and *that within three weeks after entrance they shall satisfy their teachers that they are sufficiently mature, sufficiently earnest, and sufficiently capable to warrant their remaining for the course.* Every effort will be made to guard this course from becoming a refuge for the idle, the purposeless, and therefore the unsuccessful, and to that end drastic measures of elimination will be used whenever necessary, but especially at the end of the first three weeks of the year.

The course is in no case supposed to serve as a substitute for the regular work of the college either in character or in scope of the subject-matter presented, and does not lead, directly or indirectly, to a degree, a certificate only being granted. Neither is it to be considered as preparatory to the college work. Its particular function is to give, in the shortest, most direct way possible, certain definite, specific, and perhaps uncorrelated information which will be of immediate value on the farm.

The short course in agriculture will be given in two school years of twenty-four weeks, beginning the middle of October and ending the middle of April. The object of this change in dates from that of the regular college course is to permit those who find it impossible to be away from the farm during the busy season of the year to obtain the advantages of this special training during the slack season.

In order that seriousness of purpose as regards an agricultural occupation may be assured from those taking the agricultural short course, no student will be permitted to register for the second year's work who has not had at least six months' practical experience on a farm. This experience should be obtained upon a farm making a specialty of the line of work which the student intends to follow.

The special work in agriculture treats in an elementary way of such subjects as plant life, soils and fertilizers, vegetable gardening stock judging, crops, dairy practice, poultry, fruit culture, etc.

Short-course work is of comparatively recent introduction at this institution, and consequently is still in the process of development. The tabulated course follows:

First Year

Work commences October 14, 1918. First-year subjects run continuously for the year

Botany A—Plant Life	1[2½]
Agronomy A—Soils and Fertilizers	5[1]
An. Husb. B—Stock Judging.....	[2]
An. Husb. A—Breeds	2
An. Husb. H—Poultry	1[2]
Zoölogy A—Economic Entomology.....	3

Second Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Agron. B—Crops and Rotation.....	5[2]	Agron. C—Farm Management	3[1]
An. Husb. C—Dairy Practice.....	1[3]	An. Husb. E—Principles of Breeding..	2[1]
An. Husb. D—Principles of Feeding...	3	Agron. D—Farm Machinery.....	1[3]
An. Husb. G—Care of Animals.....	2	Hort. A—Vegetable Gardening.....	3[1½]
Hort. B—Fruit Culture	3[1]	Hort. E—Spraying and Pruning.....	2[1½]
Hort. G—Propagation of Plants.....	[1]	Hort. F—Home Grounds	3
Breeds of Poultry	[1]		

IV. SPECIAL POULTRY COURSE

Rhode Island State College in the winter of 1898 gave the first poultry course offered in the United States. Since that date the course has been offered annually to men and women of sufficient maturity to understand the subject. The work consists of practice, reading, and attendance on lectures and demonstrations. Besides daily lectures by the college faculty, specialists from outside the college are secured to lecture on their various lines.

V. SPECIAL COURSE FOR FARMERS

Convocation week for the farmers of Rhode Island begins February 4 and closes February 7, 1919. Lectures on agricultural subjects are given hourly thru the day with abundant opportunity for discussion. The lecturers are members of the college faculty and specialists from outside the college.

REQUIREMENTS FOR ADMISSION TO THE DEGREE COURSES

Units

The requirements for admission are reckoned in units. A "unit" represents the successful completion of a year's study of a subject, to which have been devoted not less than one hundred and twenty recitation periods of sixty minutes each, or their equivalent (*e. g.*,

one hundred and eighty periods of forty minutes each). Fourteen units are required. A student may obtain this amount of entrance credit from high-school work or from examination.

Groups

The entrance subjects are divided into two groups, A and B. Those in A, unless otherwise indicated, are required of all candidates for admission. Candidates who have not studied algebra the past year are urged to review the subject during the summer before entering college. Observance of this warning will prevent many failures in college work.

GROUP A.

The school year is reckoned at thirty-six weeks, the minimum length.

English	108 weeks.....	3 units
Modern Language—other than English..	72 weeks.....	2 units
Algebra—for engineering and applied science students,	54 weeks...	1½ units
Algebra—for agricultural and home economics students,	36 weeks..	1 unit
Geometry, Plane	36 weeks.....	1 unit
Geometry, Solid—for engineering students only,	18 weeks.....	½ unit
Physics	36 weeks.....	1 unit
History	36 weeks.....	1 unit

The remainder of the fourteen units must be taken from

GROUP B.*

No subject is accepted for more than the amount here stated or for less than one-half of a unit.

Foreign Language	216 weeks.....	6 units
Geometry, Solid—for other than engineering students,	18 weeks....	½ unit
Botany	36 weeks.....	1 unit
Algebra—for students in agriculture and home economics,	18 weeks	½ unit
Chemistry	36 weeks.....	1 unit
Geology	18 weeks.....	½ unit
Physiography	36 weeks.....	1 unit
Physiology	18 weeks.....	½ unit
History	36 weeks.....	1 unit
Drawing	36 weeks.....	1 unit
Domestic Science	18 weeks.....	½ unit
Shop Practice	18 weeks.....	½ unit
Farm Practice	18 weeks.....	½ unit

* Other subjects not here named will receive due consideration if presented on the application blank, with a statement of the work done.

REGISTRATION

Registration occurs on the first day of each term, from 9 A. M. to 12 M., and from 1 P. M. to 4 P. M. A special fee of one dollar will be charged for registration after the first day of each term.

Each student is required to sign the following form of application before registering for the current year :

I hereby make application for registration as a student in Rhode Island State College for the year. In consideration of such registration and the attendance consequent thereupon, I hereby engage and obligate myself cheerfully to observe and conform to the rules of said college, having specifically in mind, without excluding others, that in relation to hazing and class disturbances. I further engage promptly and on my own motion to withdraw from the college whenever I find myself unable or unwilling to carry out the obligation herein assumed.

METHODS OF ADMISSION

On any or all of the subjects named in both groups, satisfactory standings from any reputable high school will be accepted in lieu of examination, on presentation of a copy of the student's full record in the high school, showing clearly the nature of the work pursued in each subject, time devoted to it, and grade of work done. This copy must be duly signed by the proper official of the school, and must be accompanied by a certificate of good moral character. The latter, however, may be from any reputable source. On application, blanks showing definitely the full nature of the information desired from the high school will be furnished.

Candidates not presenting satisfactory standings from reputable high schools will be examined, over ground corresponding to the number of units attached, on all the subjects of Group A and on such of Group B as they may offer. Examinations for entrance will be held at the opening of the college year in September, as announced in the calendar, page 9.

SPECIFICATIONS OF GROUND TO BE COVERED*

GROUP A

These subjects, with the exception stated, are required of all students to the extent indicated by the number of units designated in each case.

* For any or all of the subjects described below the requirements of the College Entrance Examination Board, upon which these specifications are largely based, will be accepted. A circular stating these requirements in detail and blank forms of application for examination may be obtained by sending ten cents in stamps to the College Entrance Examination Board, Post Office Sub-Station 84, New York City.

Languages

ENGLISH, 3 UNITS.—In English two aims are sought: first, a knowledge of the language—including the acquisition of an ample vocabulary and power of effective expression—second, some acquaintance with the literature. To attain the first, grammar and composition must be thoroly studied. Thruout the secondary-school course there should be much practice in writing along a variety of lines suggested by the pupil's experience, his general interests, and studies other than English. Spelling, punctuation, accuracy of idiom, should receive due attention in all written work; while correct and forceful oral expression should also be insisted upon.

To meet the requirement in literature certain selections are to be made from two lists of works—one for reading, the other for closer study. It is hoped to foster in this way a taste for good books and an intelligent appreciation of them. Committing to memory selected passages and reading aloud are strongly urged. In all cases some knowledge of the author's life and his place in literature should be acquired, while a more exacting study of selected texts would lay emphasis on form and style, meaning of particular words and phrases, and the significance of allusions. The list of books prescribed for 1918-19 may be obtained from the nearest high-school principal.

ELEMENTARY GERMAN, 2 UNITS.—During the first year the work should consist of drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. During the second year the course should be a continuation of the first as regards grammar, composition, and conversation. The reading should consist of at least 200 pages of such texts as Arnold's *Fritz auf Ferein*, Wildenbruch's *Das Edle Blut*, Mosher's *Wilkommen in Deutschland* and Benedix' *Der Prozess*.

ELEMENTARY FRENCH, 2 UNITS.—The course in French should parallel that in German. During the first year there should be drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. Thruout the second year the course should be a continuation of the first as regards grammar, composition, and conversation. At least 250 pages of such texts as Bruno's *Le Tour de la France*, Malot's *Sans Famille*, Mérimée's *Colomba*, Sarcey's *Le Siège de Paris*, and Hugo's *La Chute* should be read.

Mathematics

ALGEBRA, 1½ UNITS.—The requirement in algebra comprises the four fundamental operations; factoring; highest common factor and lowest common multiple; fractions; linear equations; exponents; radicals; quadratic equations; simultaneous equations involving quadratics; binomial theorem for positive integral exponents. Problems should be given at frequent intervals. Candidates for the courses in Agriculture and Home Economics are required to offer but one unit for this work.

PLANE GEOMETRY, 1 UNIT.—This requirement is met by the usual theorems and constructions of standard text-books, numerous originals, and applications.

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—The ground is covered by the usual theorems and constructions of standard text-books, originals, and applications.

Science

PHYSICS, 1 UNIT.—This course should consist of class-room work based on a standard text-book, accompanied by lecture-table demonstrations and by numerous practical problems. A parallel course in individual laboratory work is desirable, but is not absolutely required. In the case of laboratory work, one hour of credit will be allowed for each two hours spent in the laboratory.

History, 1 unit

The requirement in history will be met by presenting any one of the following subjects: ancient history, especially Greek and Roman, with the chief events of the early Middle Ages to the death of Charlemagne (814); medieval and modern European history from 814 to the present time; English history; American history and civil government.

GROUP B

From this group units are to be taken, in addition to those of Group A, sufficient to make up the whole number required. Any combination of units, including fractions not less than one-half, will be allowed.

Languages

GERMAN, 2 UNITS.—The requirement for Elementary German is indicated under Group A. One unit will also be allowed for third and one for fourth year work. Third-year study should emphasize reading and advanced composition. Suitable texts are Richl's *Der Fluch der Schonheit*, Freytag's *Bilder aus der deutschen Vergangenheit*, Lessing's *Minna von Barnhelm*, Schiller's *Wilhelm Tell*, and Heine's *Die Harzreise*. The fourth year's work should mark a decided advance in the mastery of vocabulary and idioms shown both in speaking and writing. The works may be made the basis for themes. The following reading matter is suggested: Freytag's *Soll und Haben*, Fulda's *Der Talisman*, Hauff's *Lichtenstein*, Scheffel's *Ekkehard*, Schiller's *Wallenstein*, *Maria Stuart*, or *Geschichte des dreissigjahrigen Krieges* (Book III), Dahn's *Ein Kampf um Rom*, Goethe's *Dichtung und Wahrheit* (Books I-IV).

FRENCH, 2 UNITS.—The requirement for Elementary French is indicated under Group A. One unit will also be allowed for second and one each for third and fourth year work. In third year emphasis should be laid on reading. Some time ought also to be given to advanced composition. Among suitable texts may be mentioned Racine's *Athalie*, Corneille's *Le Cid*,

Molière's *Le Bourgeois Gentilhomme*, Sandeau's *Mademoiselle de la Seiglière*, Vigny's *La Canne de Jonc*. From the fourth year's study increased facility in conversation and composition should be gained, and any modern French, other than technical, should be read with ease. Such texts as the following are recommended: the prose works of Dumas père, Hugo's *Ruy Blas*, La Fontaine's *Fables*, Sainte-Beuve's *Essays*, Taine's *Origines de la France Contemporaine*, Pellissier's *Movement Littéraire au XIX Siècle*. At least 600 pages should be read.

LATIN, 1 TO 4 UNITS.—A credit of one unit will be given for each year's work in Latin, covering in all a standard beginner's book, four books of Cæsar's Gallic War, six orations of Cicero and six books of Virgil's *Æneid*. It is expected that work in prose composition and sight reading will be included in each subject.

Mathematics

SOLID GEOMETRY, ½ UNIT.—See Group A for other than engineering students.

Science

BOTANY, 1 UNIT.—The preparation in botany should include individual laboratory work recorded by notes and diagrammatic drawings. Field work is desirable, and should also be accompanied by notes. The notebook and drawings certified by the teacher should be presented at the time of application for entrance credit. The year's course of study should consist of three parts, viz.: 1. The general principles of the anatomy, morphology, physiology, and ecology of seed plants. 2. The natural history of the plant groups. The structure, reproduction, and adaptations to habitat of one or two types from each group should be studied. 3. Classification. A brief study of the subdivisions of the above groups. Ability to determine species of flowering plants is not essential. Any standard text-book covering the above field may be used.

CHEMISTRY, 1 UNIT.—An elementary text-book, such as William's *Elements of Chemistry*, or *First Principles of Chemistry*, by Brownlee and others, should be covered by recitations. At least one exercise per week must be devoted to individual work in the laboratory. The pupil must perform forty or more experiments, such as are described in the Report of the College Entrance Examination Board, 1918, and keep a notebook in which he describes the apparatus used, records the phenomena observed, and states the conclusions in his own words, in each experiment.

GEOLOGY, ½ UNIT.—In Geology, a study of the following subjects should be made: rock-forming minerals, their names and chemical constituents; earthquakes—their cause and effects; volcanoes—distribution, types, character of eruption, nature of erupted material; supposed physical state of the earth's interior; surface agencies destructive to rocks, with brief illustrations; processes of re-construction, with illustrations; rocks—classification, accord-

ing to origin, rock fracture and dislocation, rock structure due to erosion, metamorphic rocks, mineral veins and their method of formation; conditions determining land sculpture; the geological periods, with land elevations, and the characteristics of climate, plant and animal life of each period.

PHYSIOGRAPHY, 1 UNIT.—This course should include a consideration of the earth as a globe, the atmosphere, the waters of the earth, the lands, life upon the earth, and the reactions between these elements. Special attention should be given to the questions of climate, the winds, the weather, tides, ocean currents, and to the effect of the ocean in modifying climatic conditions. Attention should be directed to the manner in which the land was originally formed and to the way in which the original formation has been and is being modified by the action of erosion, the winds, and frost. Thruout the course consideration should be given to the manner in which the various physical characteristics of the earth have affected life upon its surface.

PHYSIOLOGY, $\frac{1}{2}$ UNIT.—The textbook work should cover material equivalent to that of Martin's Human Body or Hough and Sedgwick's Human Mechanism. In addition the applicant should present a notebook, showing laboratory work on the elementary physiological processes and general structure of mammals.

ZOOLOGY, 1 UNIT.—The work should include: 1. The general natural history of a number of common vertebrates and invertebrates common to the locality where the work is given. 2. The classification of these forms into phylum, class and order, with the characteristics of the several groups. 3. The main anatomical features of one vertebrate, two atrophods (one an insect): an annelid, preferably the earthworm, a coelenterate, two protozoans (*Amœba* and *Paramoecium* recommended). 4. The general physiology of the above types involving digestion, absorption, circulation, excretion, and nerve function. These should be compared with the same functions in the human body. 5. The following subjects should be brought before the student in connection with the foregoing studies: asexual and sexual reproduction, alternation of generations, regeneration, fertilization and segmentation of egg cells, adaptation, variations, evidences of relationship between similar groups, and the cell structure of animals.

Certified notebooks must be presented, which include notes upon work and discussion in classroom and drawings of the forms dissected.

History, 1 unit

See Group A.

Drawing, 1 unit

This may be either freehand or mechanical. If freehand drawing is offered, the candidate should submit at least fifteen drawings, the majority to be in pencil, certified as his work by the instructor. These should show ability to sketch from various objects with considerable accuracy of proportion and

clearness of line, and a fair understanding of the rules of perspective and light and shade as applied in freehand sketching. A candidate may also present the equivalent of five hours per week for one year in elementary mechanical drawing, lettering, or sketching from models.

Domestic Science, 1-2 unit

In domestic science the student must present satisfactory evidence of knowledge in the following subjects: the use and care of the kitchen equipment, general cleaning processes, the marketable forms of staple foods. She must also show credit for at least twelve cooking laboratory lessons of two hours each.

Shop Practice, 1-2 unit

The candidate may offer carpentry or any of the various forms of benchwork given in a well-equipped manual training school, equivalent to five hours per week for one-half year.

Farm Practice, 1-2 unit

By "farm practice" is meant familiarity with the operations of the farm, such as the harnessing of teams, the use of tillage implements, and the care of dairy animals.

DEGREES

The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 17-27. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satisfactory thesis in applied or economic science, and upon passing examinations in the subjects pursued. Candidates not graduates of this college must file with the committee on graduate study, not later than October first, a detailed statement of their previous work, certified by the proper authorities. They must select, not later than November fifteenth, a major and a minor subject which must be closely related and have the approval of the committee on graduate study and of the professor in whose department the principal work is done. Major subjects may be selected in any of the following departments: agriculture; botany; chemistry; zoölogy; bacteriology; home economics; electrical, mechanical and civil engineering. The minor may be selected from undergraduate subjects outlined in the

catalog; the major, however, must be advanced work specially arranged with the individual professor. The thesis must be typewritten, upon paper of the size and quality prescribed, and two copies must be in the hands of the president not later than June first.

The requirements for the degree of Mechanical Engineer, Electrical Engineer, or Civil Engineer, consist of three years of successful professional practice, subsequent to the Bachelor's degree, one of which must have been in a responsible position; the presentation of an acceptable thesis; and the passing of examinations upon the investigations involved in the thesis. The requisites for the degree of Master of Agriculture are the same as for the engineering degrees, except that five years of professional practice are required.

A fee of five dollars is charged for registration for an advanced degree. Students from outside the state pay a tuition fee of fifty dollars during the year of residence. The cost of a diploma is five dollars.

Teachers' Certificates

The following resolution adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island College will be received as evidence of the required qualifications in scholastic subjects for a teacher's certificate of the first grade."

Rhode Island State College also offers professional courses in all subjects required by the State Board of Education for a first grade teacher's certificate, and graduates of the college who have completed all the subjects in Psychology and Education will be accredited in full for a teacher's certificate of the highest rank.*

By action of the Regents of the State of New York, taken June 9, 1910, the degrees of B. S. and M. S. from this college are accepted as a basis for the issuance of licenses to teach in that state.

Reserve Officers' Training Corps

A new feature of the college work is the establishment of a unit of the Reserve Officers' Training Corps in connection with the

* By a ruling of the State Board of Education in 1918, candidates for teachers' certificates are required to take an examination in School Law.

Military Department. The details of the subject will be found on page 80 of this catalog.

There is an increasing demand thruout the country for teachers of high-school grade who are able to give military instruction, so that students of Applied Science who can take the military training prescribed for the Officers' Reserve Corps will be adding an important asset to their professional equipment.

Expenses

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is \$25.00 a term, or \$50.00 a year for matriculants on and after September, 1917. Students who apply for admission as non-residents will be expected to pay tuition thruout their course unless there is a bona-fide change of residence of the parent or guardian.

The regular college expenses are tabulated as follows:

Board, \$4.50 per week (subject to change without notice).....	\$162 00
Room-rent, including heat and light.....	40 00
Incidental fee, \$5.00 per term.....	10 00
Student tax for Beacon, outside lectures, athletics, etc.....	10 00
Laboratory expense, \$5.00 per term, estimated.....	10 00
	<hr/>
	\$232 00

The first four items must be paid quarterly in advance; that is to say, from boarding students, \$55.50 will be required at the opening of the year, October 1, 1918, and on December 2, 1918; also at the opening of the second term in February, and again at the beginning of the fourth quarter. Non-residents of the state should add to this sum \$12.50 for tuition each quarter. Day students will be required to pay a deposit of \$5.00 for laboratory expense together with the incidental fee and student tax, making a quarterly payment of \$10.00 in advance on the above dates. In order to secure dormitory accommodations, the student is required to deposit \$10.00 with the application, the amount to be credited on the room rent for the first quarter. If the student fails to take the room, the deposit is forfeited. During vacations dormitories and fraternity houses will not be open for occupancy except under special arrangements with the college office. In such case, a higher rate for room rent will be charged, such rate to be adjusted on individual application. The item of laboratory expense

includes all material used in the various laboratories, and the destruction, breakage, or marring of apparatus and tools, and must be paid when bill is presented at the close of each term.

The probable cost of books will be from \$30.00 to \$50.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from \$10.00 to \$25.00. A fee of 50 cents will be charged for each second examination to make up a condition. Graduates pay the cost of diplomas, \$5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter.

Expenses for two-year (short course) students are tabulated as follows:

Board, \$4.50 per week (subject to change without notice).....	\$108 00
Incidental fee, \$3.50 per term.....	7 00
Laboratory expense, estimated \$5.00 per term.....	10 00

The first two items must be paid, by boarding students, in advance, per term; that is, the first payment will be required at entrance, October 14, 1918, and will amount to \$57.50, and a second payment of \$57.50 will be required on January 20, 1919. Day students must deposit \$8.50 on the specified dates, comprising the incidental fee of \$3.50 and laboratory deposit of \$5.00.

UNIFORM.—Every able-bodied male college student is required to take military science and tactics during the first two years and to wear a uniform when on drill. The uniform is provided by the United States Government, free of charge. This uniform may be worn only on drill and must be properly cared for; otherwise, the student may be required to replace articles unnecessarily worn or damaged. At the beginning of the junior year, the student will elect whether he shall undertake the duties of the Reserve Officers' Training Corps for the coming two years or not; and, in accordance with his election, will be provided with the necessary articles of uniform. Students who elect the Reserve Officers' Training Corps receive from the United States Government commutation of subsistence amounting to 30 cents per day.

TRANSPORTATION.—The college conveys day-students to and from the railroad station free of charge. Once at the beginning and end of each term, trunks will be conveyed to and from the station for students living in dormitories under college control.

BOARDING STUDENTS.—The deposit for board for 1918-19 is at present fixed at \$4.50 per week. At the end of each term, the student will be charged, pro rata, the cost of board in excess of \$4.50 per week; or, if the cost falls below \$4.50 per week, will be allowed a rebate. Owing to the uncertainty of prices for all forms of provisions and labor, the right is reserved to make change in the rate of board, at such times as may appear necessary to do so. It is, however, guaranteed that board will be furnished students at cost. Students who leave *regularly every week* on Friday afternoon and return Monday morning will receive a rebate for time of absence. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the holder of such ticket. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance.

CASES OF ILLNESS.—Arrangements for ascertaining and handling cases of illness are as follows: Each floor of the dormitory and each house has a student officer, called a monitor, appointed and paid by the college. A part of his duties is to report cases of illness. The room-mate also reports such illness to the student head-waiter in the dining-room, who sends the meal to the room and reports his action to the registrar. This official notifies the office, where such action is taken in consultation with the college physician as seems advisable. A small hospital room is maintained, where the patient may be moved, and in which he may have entire quiet and such care and attention as may be required.

MEDICAL SERVICE.—Because of the necessity for systematic medical supervision of the students, a college physician has been appointed, who devotes part of his time to the work. An effort has been made to model the service after that of the most progressive universities, with certain modifications to fit local needs. Here at Kingston, the work comes at present under three heads: 1. The care of the sick. 2. A systematic examination of students with a view to giving any needed advice, and the keeping of permanent records of their condition. 3. The making of examinations for different branches of the Government service. During the months of November and December, 1917, the records show forty-eight sick calls, ninety-one physical examinations for the Reserve Officers' Training Corps and the aviation service.

DORMITORIES FOR MEN.—East Hall affords excellent accommodations for men students. The two upper floors are entirely devoted to rooms for students. The sanitary conveniences on each floor are ample, including a full complement of shower baths. The first floor contains a social room for the men, two dining-rooms with capacity for one hundred and fifty students each, and kitchen with good equipment. South Hall and Watson House are used as fraternity houses, accommodating from twenty-five to thirty men each, while the Beta Phi and the Delta Alpha Psi fraternities have erected houses for their own use. Two houses in the village of Kingston are also hired by the college for fraternity houses.

DORMITORY FOR WOMEN.—During the summer of 1909 the interior of Davis Hall was entirely reconstructed. On the first floor are the administration offices and the office of the extension department. The upper floors of the building are utilized for the women's dormitory. The accommodations for women students in this building are under careful supervision, and compare favorably with those at any women's college in the country. There is a neat hospital, with all necessary adjuncts. The oversight of the young women is efficient, kindly, and painstaking. Attention is especially invited to the facilities and arrangements for the welfare of young women.

FURNITURE.—The rooms in the women's dormitory are provided with necessary furniture, including mattresses, but no other bedding material. *All students in the men's dormitory are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from \$8.00 to \$10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold when the student leaves, for one-half to three-fourths the original price. All students should bring with them such articles as sheets, blankets, pillow, pillow-slips (all for single bed), and towels. Men students are required to purchase mattresses at the college.

ROOMS IN THE VILLAGE.—Furnished rooms in private houses for students who occupy them thruout the college year range from

\$1.25 to \$2.50 per week. Arrangements for such rooms should be made by the individual, who may procure lists of available rooms thru the college office.

COLLEGE STORE.—Students will be required to pay cash at the store for all books and other supplies.

DAMAGE FUND.—All damage not due to ordinary wear will be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.
2. Students found guilty of such damage, but not acknowledging and settling for the damage will be charged double the cost of repair.
3. Students will be responsible for damage in their own rooms. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Religious Influences

This college is a state institution, and consequently, the widest latitude is given to all creeds and forms of religious belief. Simple assembly exercises are held on one day of each week and are conducted by the president or some other member of the faculty. It is required that students attend assembly.

A branch of the Intercollegiate Young Men's Christian Association is doing active work among the men students, holding a meeting weekly thruout the year. This association conducts courses in Bible study, and is taking the lead in endeavoring to establish sound and high ideals of college life.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and if possible to join its membership. Churches of various denominations in Wakefield, four miles distant, welcome our students. Limited transportation on Sunday mornings is provided. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

The College Lecture Association

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to introduce talented speakers upon subjects both entertaining and instructive. The association may be looked upon as a permanent and important factor in college activities.

EQUIPMENT

FARM AND CAMPUS.—The landed property of the college has a total area of 170 acres. About forty-one acres of this area are devoted to buildings, lawns, and athletic grounds; nine acres are in forest; and six are being developed as an arboretum. Thirty-five acres are used for the field investigations of the experiment station, which are valuable object lessons in agricultural instruction. The remainder is used for garden and orchard, and for raising crops for the live stock. The total value of land, buildings, and equipment is nearly \$400,000.

AGRICULTURAL BUILDINGS.—The agricultural buildings consist of a commodious dairy barn with laboratories for instruction in farm dairying and milk testing; a horse barn of modern construction; a greenhouse with an area of 10,000 square feet; a building attached to the greenhouse for class work in agronomy and horticulture, and a group of buildings used for instruction and experimentation in poultry raising.

ENGINEERING BUILDINGS.—The engineering department is equipped with modern machine, forge, and pattern-making shops, located in a building known as Ladd Laboratory. In Lippitt Hall, a granite building, 134 by 40 feet, are housed the lecture rooms, drawing rooms, testing rooms, and engineering laboratories of the department. A boiler house and a dynamo room, from which heat, power, and light are furnished for the various buildings, are a part of the engineering outfit for practical instruction and for experimentation in electrical and steam engineering.

SCIENCE HALL.—This building was first occupied in October, 1913. It consists of three stories and a basement, measures 154 by 60 feet, and is built of native granite. Here are housed the departments of chemistry, physics, zoölogy, bacteriology, and botany. Each

department is provided with commodious laboratories, recitation room, and department library room. An amphitheatre having a seating capacity of 150 and provided with suitable projection apparatus, serves for the common use of the various departments requiring such a room.

HOME ECONOMICS LABORATORIES.—The special laboratories of this department are located in South Hall and in a small building near it.

TAFT LABORATORY.—The laboratories and offices of the experiment station are housed in a granite building known as Taft Laboratory.

DRILL HALL AND ATHLETIC HOUSE.—The drill hall, a room 134 by 40 feet, located in Lippitt Hall, is used both as an armory and as a gymnasium. A dressing room and bath room are attached to the hall. An athletic house provided with bath and dressing rooms for out-of-door sports is located at the athletic field, which is equipped with cinder track and straightaway for track athletics. Tennis courts for both men and women are also provided.

The Library

The library occupies two large adjoining rooms in Lippitt Hall, and numbers over seventeen thousand volumes. The books are arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a card catalog gives author, title, and subject entries. As the library has been from the first intended for reference work, the various departments of instruction have made their selections with the greatest care. In the reading-room, one hundred and twenty of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

Since the library has been a government depository twenty-five hundred books and pamphlets have been received, which are of value in scientific investigation and research.

The library is open every week day from 8:00 A. M. to 6:00 P. M., with the exception of an hour at noon. The librarian or her representative is in constant attendance, to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the State are at liberty to use the library.

Location

The college campus is one and one-half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. The ride from Providence is about forty to forty-five minutes in length. From New York the time is some four hours.

Telephone Calls

Except in cases of extreme emergency, the college office cannot undertake to call students to the telephone. Men students boarding at the college may be reached over the pay-station telephone at East Hall, Narragansett Pier 20259 J, at 7:00 to 7:30 A. M., 12:00 to 12:30 P. M., and 6:00 to 6:30 P. M. Women students may be reached over the pay-station telephone at Davis Hall 20259 W, at 7:30-8:00 A. M., 12:30-1:00 P. M., and 6:30-7:30 P. M.

DEPARTMENTS OF INSTRUCTION

The following subjects are offered in the different departments. All subjects in the departments of instruction preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture

PROFESSOR ADAMS, PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK,
MR. GODIN, MR. CORRIVEAU, MR. PALMER

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work outlined above, all students registered for a degree in agriculture will be required to show certain familiarity with the ordinary operations of the farm, before such degree is given.

In order that those students who have not had an opportunity to receive training in the practical work of the farm may become familiar with some of the more common operations, they will be required, during their connection with the college, to do a certain amount of routine farm work without pay. This will include work in the dairy barn, poultry yard, greenhouses and gardens. This training will be in addition to the laboratory credits prescribed in the regular course. The amount of such work required will depend upon the efficiency shown by the student. No college credits will be given for this work, yet the neglect of this phase of the training may be considered a sufficient cause for dismissal from the institution. Students taking practical work upon farms during the sum-

mer vacations will be required to furnish a certificate from their employers, stating the time spent on the farm and the kind and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is to elect during the Senior year.

Agronomy

PROFESSOR ADAMS, ASSISTANT PROFESSOR BURDICK

The instruction in agronomy may begin the first term of the Sophomore year, when a study is made of the forage plants. Following this work are subjects dealing with the other field crops and their uses as food for man and beast. In the work with soils and fertilizers, especial emphasis is placed upon the problems connected with the proper use of chemical manures.

The business side of farm life is given attention in the subjects treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment station, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery. A well-equipped blacksmith shop is also provided.

Students have the advantage of the field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects

II. **Forage Crops.**—History and development of the plants used for forage; silage, methods of construction of silos. *Two recitation credits, first term. Required of Sophomores in Agriculture.*

III. **Soils and Fertilizers.**—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Four recitations and one*

and one-half laboratory credits, first term. Required of Juniors in Agriculture; option for Juniors in Applied Science. Prerequisite: Chemistry I and II.

IV. **Farm Crops.**—Origin and history; production and place in the rotation of clovers, grasses, and root crops. *Three recitation credits and one laboratory credit, second term. Required of Juniors in Agriculture; option for Juniors in Applied Science. Prerequisite: Botany I and II.*

VI. **Farm Machinery.**—Development of farm machinery, methods of construction, function, and operation. *Two recitation credits and one laboratory credit, second term. Option for Juniors in Agriculture.*

VII. **Farm Management.**—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming accounts. *Two recitation credits, second term. Required of Juniors in Agriculture. Prerequisite: Agronomy III and IV.*

VIII. **Farm Management. (Advanced.)**—Individual problems of farm management are assigned. Field trips are made for studying different types of farming. Problems in planning cropping systems and other management work. There will be at least two one-day field trips. *One recitation and two laboratory credits, second term. Elective for Seniors in Agriculture.*

IX. **Literature.**—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports on special topics. *Two recitation credits, second term. Elective for Seniors in Agriculture.*

X. **Agricultural Experimentation.**—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits, second term. Required of Seniors in Agriculture.*

XI. **Plant Breeding.**—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Three recitation credits, first term. Required of Seniors in Agriculture; option for Seniors in Applied Science. Prerequisite: Botany I and II.*

XII. **Farm Accounting.**—Aims and objects of farm accounts, farm inventories, single enterprise accounts, complete set of farm accounts and special records. Emphasis will be placed upon the interpretation of results as applied to the organization of a farm. *One recitation and one laboratory credit, first term. Elective for Seniors in Agriculture.*

A. **Soils and Fertilizers.**—An elementary course on the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Five recitation credits and one laboratory credit. Required of Short-Course students in Agriculture, first year.*

B. **Crops and Rotations.**—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various types of farms. *Five recitation credits and two laboratory credits, first term. Required of Short-Course students in Agriculture, second year.*

C. **Farm Management.**—An elementary course on the principles of farm management, equipment, cost of production. *Three recitation and one laboratory credit, second term. Required of Short-Course students in Agriculture, second year.*

D. **Farm Machinery.**—Care and repair of farm implements. *One recitation and three laboratory credits, second term. Required of Short-Course students in Agriculture, second year.*

Animal Husbandry

PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK, MR. PALMER

The subjects in animal husbandry are so arranged as to furnish practical as well as theoretical instruction in the selection, care, and management of live stock on the farm. All students who graduate in agriculture are required to study breeds of stock, stock-judging, and veterinary practice. The student is taught how to select and care for farm animals. Students specializing in animal husbandry are offered advanced stock-judging, the principles of feeding, breeding, and the management of herds, flocks, and studs. Work in dairying is offered during the second term of the Junior year, and one who cares to specialize will find an elective thruout the Senior year.

Instruction in poultry culture is given during the Senior year, and is both practical and theoretical. During the same year an elective is offered in advanced poultry judging and poultry investigation. The equipment in poultry is particularly strong. The college poultry plant enables the student to obtain a large amount of practical experience in incubation, brooding, feeding, and general management. In addition to the poultry stock in the college yards, students have the opportunity of following the investigations which are being conducted by the experiment station. An eight weeks' course in poultry keeping is offered also during the winter months, full information concerning which may be obtained by addressing the President of the college.

Subjects

I. **Stock Judging.**—Scoring and comparison of various types of horses, cattle, sheep and swine. Study of the special purpose or special type animal. *Two laboratory credits, second term. Required of Freshmen in Agriculture.* Professor Ladd.

II. Advanced Stock Judging.—A continuation of the work given in Animal Husbandry I in the judging of the various classes of farm animals. Tracing of pedigrees. Students chosen to represent the college in the annual stock judging contest will be credited with this subject. *Two laboratory credits, second term. Elective for Juniors or Seniors in Agriculture.* Professor Ladd.

III. Breeds.—History and characteristics of the principal breeds of farm animals. A study of conditions to which each is adapted. *Two recitation credits, second term. Required of Freshmen in Agriculture.* Professor Ladd.

IV. Principles of Breeding.—A study of the science and art of breeding. Discussion of the laws of heredity as applied to improvement of animal types. *Three recitation credits, second term. Required of Seniors in Animal Husbandry; option for Seniors in Applied Science; elective for others. Prerequisite: Zoölogy III.* Professor Ladd.

V. Management of Dairy Cattle.—This course covers the field of milk production. It includes the building up of the dairy herd; the proper care of dairy cattle under different conditions; the dairy barn; special problems of feeding for milk production; advertising; fitting for sale and show ring. *Two recitation credits, first term. Elective for Seniors in Agriculture.* Professor Ladd.

VI. Feeds and Feeding.—Composition of feeds, principles of animal nutrition. Various methods of feeding farm animals. Balanced rations. Feeding standards. *Three recitation credits, first term. Required of Seniors in Agriculture; elective for Seniors in Applied Science. Prerequisite: Chemistry XIV.* Professor Ladd.

VII. Dairy Practice.—Lectures and laboratory practice in Babcock test and in handling milk and making butter on the farm. Herd testing methods. *One recitation and two laboratory credits, second term. Required of Juniors in Animal Husbandry; elective for others.* Assistant Professor Burdick.

VIII. Dairy Practice.—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and two laboratory credits, thruout the year. Elective for Seniors in Agriculture.* Assistant Professor Burdick.

IX. Research and Literature.—*Hours to be arranged, first term. Elective for Seniors in Agriculture.* Professor Ladd.

X. Veterinary Practice.—Veterinary anatomy, materia medica, obstetrics, pathology. Combating disease from the farmer's standpoint. Causes and treatment of injuries. *Three recitation credits, first term. Required of Juniors in Agriculture. Prerequisite: Zoölogy X.* Professor Ladd.

XII₁. Poultry Culture.—A study of all branches of poultry keeping. *One recitation credit, first term. Required of Juniors in Agriculture.* Mr. Palmer.

XII₂. Poultry Culture.—Laboratory work, consisting of pen practice,

incubation, brooding, killing and dressing. *Two laboratory credits, second term. Elective for Juniors in Agriculture.* Mr. Palmer.

XIII. Judging Poultry.—Practice in judging standard poultry both by comparison and score card methods. *Two laboratory credits, first term. Elective for Seniors in Agriculture.* Mr. Palmer.

XIV. Poultry Husbandry.—Study of poultry investigations and experimental work in various lines of poultry keeping. *At least two laboratory credits, thruout the year. Elective for Seniors in Agriculture and Applied Science, first term.* Mr. Palmer.

XV. Management of Beef Cattle and Horses.—During the first nine weeks the course will cover practical methods of beef production. Studies will be made of successful practices in feeding for the market as well as advertising, fitting for sale and show ring, and the general care and management of beef cattle. During the last nine weeks, similar studies will be made in horse production, including market classes of horses, their production and utility, and successful methods of handling and training horses. *Two recitation credits, first term. Elective for Seniors in Agriculture.* Professor Ladd.

XVI. Management of Sheep and Swine.—During the first nine weeks the best systems of sheep husbandry will be studied. This will include rearing for mutton and wool; production of spring lambs; fattening sheep and lambs for market; general care and management of the breeding flock; advertising, fitting for sale and the show ring. During the last nine weeks similar studies will be made in pork production, including a study of foodstuffs with reference to their adaptability to pork production. *Two recitation credits, second term. Elective for Seniors in Agriculture.* Professor Ladd.

A. Breeds.—Breeds of horses, cattle, sheep, and swine. Emphasis is placed on the type best fitted to the agriculture of New England. *Two recitation credits, thruout the year. Required of Short-Course students in Agriculture, first year.* Professor Ladd.

B. Stock Judging.—Judging the various classes of animals and their adaptability to different purposes, as cattle for milk or beef production, horses for driving or draft. *Two laboratory credits, thruout the year. Required of Short-Course students in Agriculture, first year.* Professor Ladd.

C. Dairy Practice.—Babcock test for dairy products, production of sanitary milk, and butter making. *One recitation and three laboratory credits first term. Required of Short-Course students in Agriculture, second year.* Assistant Professor Burdick.

D. Principles of Feeding.—Compounding rations. *Three recitation credits, first term. Required of Short-Course students in Agriculture, second year.* Professor Ladd.

E. Principles of Breeding.—A study of the selection of animals, heredity, and variation. *Two recitation credits and one laboratory credit, second term. Required of Short-Course students in Agriculture, second year.* Professor Ladd.

G. **Live Stock Care and Sanitation.**—Housing, care, and management of farm animals. Practical directions for handling of stock on the farm. *Two recitation credits, first term. Required of Short-Course students in Agriculture, second year.* Professor Ladd.

H. **Poultry Keeping.**—Study, demonstrations, and work in all of the practical branches of the poultry department. *One recitation and two laboratory credits, thruout the year. Required of Short-Course students in Agriculture, first year.* Mr. Palmer.

I. **Breeds of Poultry.**—A study of the different breeds and types of poultry. *One laboratory credit, first term, second year.* Mr. Palmer.

Bacteriology

PROFESSOR HADLEY

The instruction in bacteriology is arranged to meet the requirements of two classes of students:

1. In the first place the subject is presented in an elementary way for those whose main interest lies in other fields of work, but who at the same time desire a general knowledge of micro-organisms and their relation to problems of human life, including agriculture, sanitation, foods, and the many problems of personal and public health and hygiene. For such students Bacteriology I₁ and I₂ are offered. The subject requires some familiarity with certain fundamental biological principles, an appreciation of which can be derived thru Zoölogy I or Botany I. For this reason one or the other of these subjects is made a prerequisite. Bacteriology I is taught by means of laboratory work supplemented by lectures and required reading.

2. In the second place the work in bacteriology is arranged to afford opportunity for specialization on the part of the students in the Applied Science Course who anticipate entering some branch of applied bacteriology after graduation. Such specialization naturally looks forward to service in (1) the educational, (2) the commercial, (3) the municipal or (4) the research field, as exemplified by (1) college teaching, (2) private manufacturing laboratories of biologic products, (3) departments of public health (city or state), and (4) the State Agricultural Experiment Stations and privately endowed institutions of research, respectively. For students desiring to specialize in any of these fields, Bacteriology II₁ and II₂ are offered. These subjects are not suited to and are not recommended

for students who do not intend to specialize in bacteriology or in a closely allied subject. They should be preceded by advanced language work in German or French III, by other biological subjects which afford a foundation in anatomy (both gross and microscopic) and physiology; and, if possible, should be preceded or accompanied by physiological chemistry (Chemistry XIX).

In Bacteriology II₁, opportunity is offered to acquire advanced bacteriological technique. The program is confined largely to laboratory work. In the second term of advanced bacteriology (II₂) advanced technique is continued with special reference to diagnostic blood tests involving agglutination, precipitation and complement-fixation methods. In addition the student may be permitted to pursue individual work on a selected problem and opportunity is offered to become familiar with some of the methods of bacteriological research. This work may be outlined with special reference to the particular branch of the subject which the student plans to enter, such as agricultural, industrial or pathogenic bacteriology. Bacteriology II₂ also involves assigned reading and the discussion (seminar) of bacteriological and protozoölogical theories and problems and requires a minimum of ten hours attendance.

Subjects

I₁. General Bacteriology (systematic).—A subject designed to give the student a general knowledge of the bacteria; a study of laboratory methods and technique for the cultivation of bacteria; the isolation and determination of unknown species. *One recitation credit and two laboratory credits, first term. Prerequisite: Botany I or Zoölogy I. Required of Seniors in Agriculture and Home Economics. Elective for Juniors and Seniors in other courses. Bacteriology I₁ and I₂ must be taken continuously.*

I₂. General Bacteriology (applied).—A subject designed to acquaint the student with the varied application of bacteriology to practical problems, including the bacteriology of air, water, milk and other dairy products, together with the relation of bacteria to agronomy, dairying, hygiene and to the prevention, diagnosis and treatment of communicable diseases. *One recitation credit and two laboratory credits second term. Prerequisite: Bacteriology I₁. Required of Seniors in Agriculture and Home Economics. Elective for Juniors and Seniors in other courses. Bacteriology I₁ and I₂ must be taken continuously.*

II₁. Advanced Bacteriological Technique.—A study of special methods employed in the investigation of bacteriological problems. The work includes the preparation of culture media, the bacteriological examination of air, shell-

fish and meats; a study of enzyme production by bacteria; of acid production; the relation of bacterial growth to oxygen supply; determination of thermal death point, of testing the germicidal power of unknown disinfectants; filtration; pathogenesis and virulence; experimental inoculations, post-mortem examinations; active and passive immunization. *One recitation credit and three laboratory credits, first term. Prerequisite: (beginning 1917), Zoölogy VIII, and (beginning 1918), German or French III. Elective for Seniors who have passed with B grade in Bacteriology I₁ and I₂.*

II₂. Advanced Bacteriological Technique: Theories and Problems.—Laboratory studies involving the examination of the blood by bacteriological, histological and serological methods; serological diagnosis; forensic blood tests, etc. Assigned reading and discussions. *One recitation and three laboratory credits, second term. Elective for Seniors who have passed with credit in Bacteriology II₁.*

Botany

PROFESSOR MERROW

The aim of the department is to give a general knowledge of plant life, followed by subjects of an economic nature. The college is well located for carrying on this line of work. The native flora is extensive, and an abundance of material is furnished by the cultivated plants of the gardens and fields of the college farm. The green houses supply fresh material for winter use, and the herbarium of 6,000 specimens is a useful reference collection. The laboratory is equipped with dissecting and compound microscopes, a microtome, paraffin bath, and simple physiological apparatus. Charts and models are provided for lecture demonstrations. A good working library, including several botanical periodicals, is an important factor in the outfit for instruction.

Subjects

I. General Botany.—A study of common plants, their structure, physiology, evolution, and adaptation to environment. *Two laboratory credits and one recitation credit thruout the year. Required of Freshmen in Agriculture, Applied Science, and Home Economics. Professor Merrow.*

II. Botany of crops and weeds.—*Two laboratory credits and one recitation credit, first term. Required of Sophomores in Agriculture and Applied Science. Professor Merrow.*

III. Trees and shrubs.—The determination of native and introduced trees and shrubs in summer and winter condition. *One laboratory or field credit, thruout the year. Required of Sophomores in Agriculture.*

IV. **Forestry.**—The management of New England wood lots. *Two credits, second term. Given in alternate years, next in 1919. Option for Juniors or Seniors in Agriculture.*

V. **Histology.**—Seed plants are studied by the usual histological methods of imbedding, sectioning, and staining. *Four laboratory credits and one recitation credit, first term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science. Professor Merrow.*

VI. **Pathology.**—Diseases caused by parasitic fungi and the remedies for them. *Four laboratory credits and one recitation credit, second term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science. Professor Merrow.*

VII. **Assigned Work.**—*Three credits thruout the year. Elective for Seniors in Applied Science and Agriculture. Professor Merrow.*

A. **Plant Life.**—Elementary agricultural botany.—*Two and a half laboratory credits and one recitation credit, thruout the year. Required of Short-Course students in Agriculture, first year.*

Chemistry

PROFESSOR LEIGHTON, ASSISTANT PROFESSOR SMITH, PROFESSOR HARTWELL, MR. PERKINS

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. The work is designed to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including the principal technical processes, and a brief account of the carbon compounds. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Two periods per week for the first half-year and three for the second half-year are devoted to the lectures and recitations, and three hours per week for a half-year to the practical work in the laboratory, where the student has an opportunity to verify some of the chemical theories and to become familiar with substances and their chemical behavior. During the second half of this year the laboratory period is devoted to qualitative analysis, which for Chemical Engineering and Applied Science students continues thru the first half of the Sophomore year. The subject is taught in part by means of recitations and lectures, but mainly by work in the laboratory. Students are required to complete a systematic course in basic and acid analysis, and to analyze correctly a number of alloys, salts, and minerals.

Quantitative analysis is taught mainly by laboratory practice, but sufficient time is devoted to lectures and recitations to teach thoroly the fundamental principles involved. The work comprises gravimetric and volumetric analysis, and the quantitative determination of salts, alloys, ores, minerals, and commercial and food products. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such theoretical and practical knowledge as to prepare him for analytical work of any kind.

The study of organic chemistry begins with a short course, designed to cover the general principles and methods, and to include a description of the more important compounds. The subject is continued by those who wish to specialize in chemistry in a more extended course covering the aromatic series and the chemistry of the dyestuffs, and accompanied by laboratory work in organic preparations and analysis. The theoretical and basic principles of chemistry, with their general application, are thoroly studied by recitation, lectures, and laboratory work in the course in physical chemistry.

The descriptive side of industrial chemistry, which comprises a general survey of the technical applications of chemical principles to the arts and industries, is studied by recitation work; while practical technical operations, such as textile coloring, suited to the needs of the individual student, are studied by laboratory practice.

Agricultural chemistry, required of agricultural students in the Sophomore year, embodies the chemistry of soils and fertilizers, also the chemistry involved in the changes which take place during the growth of animals and plants, as well as in the storage or manufacture of the ordinary farm products.

Subject XXI is intended to familiarize the student with the general field of chemical literature, and to inculcate the habit of keeping up with the recent advance in chemical science by reports and discussion of articles appearing in the chemical journals. This course is preparatory for Subject XX, which involves original investigation.

The laboratory occupies the first floor and a part of the basement of Science Hall, seventeen rooms altogether, including a large general laboratory, organic and analytical laboratories, weighing room, library, large lecture room, recitation room, two offices, store rooms and supply room. It is well equipped with apparatus and consulting library for teaching the subjects mentioned below.

Subjects

I. **General Chemistry.**—*Two recitation and one and one-half laboratory credits, first term. Required of Freshmen in all courses. Assistant Professor Smith, Mr. Perkins.*

II. **General Chemistry and Qualitative Analysis.**—*Three recitation and one and one-half laboratory credits, second term. Required of Freshmen in all courses. Professor Leighton, Mr. Perkins.*

III. **Qualitative Analysis.**—*Basic and acid analysis; analysis of salts, industrial and natural products. Three laboratory credits, first term. Required of Sophomores in Applied Science and Chemical Engineering. Professor Leighton.*

IVa. **Organic Chemistry.**—*Three recitation credits and one and one-half laboratory credits, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Professor Leighton.*

IVb. **Organic Chemistry.**—*Three recitation credits and one laboratory credit, first term. Required of Sophomores in Home Economics, Agriculture, and Applied Science; elective for others who have completed Chemistry III. Assistant Professor Smith.*

V. **Organic Chemistry (advanced).**—*To be given alternate years. Given in 1918. Four recitation credits, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Leighton.*

VI. **Organic Chemical Laboratory.**—*Three laboratory credits, second term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Assistant Professor Smith.*

VII. **Quantitative Analysis.**—*Gravimetric and volumetric analysis. Analysis of minerals, ores, alloys, and industrial products. Three laboratory credits, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Assistant Professor Smith.*

VIII. **Quantitative Analysis.**—*Five laboratory credits, second term, Junior year. Required of students in Chemical Engineering, and of students who take the Chemical Option in Applied Science. Elective for those who have completed Chemistry III. Assistant Professor Smith.*

X. **Quantitative Analysis.—Food Analysis.**—*To be given alternate years; given in 1918. Four laboratory credits, second term. Required of Seniors and Juniors in Home Economics. Elective for others who have completed Chemistry IV. Assistant Professor Smith.*

XII. **Physical Chemistry.**—*To be given alternate years. Given next in 1919. Four recitation credits, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III. Professor Leighton.*

XIV. Agricultural Chemistry.—*Four recitation credits, second term. Required of Sophomores in Agriculture. Prerequisite: Chemistry I, II and IV. Professor Hartwell.*

XV. Gas Analysis.—See Mechanical Engineering XV.

XVI. Industrial Chemistry.—*Four recitation credits, first term. Required of Juniors in Chemical Engineering and of Juniors who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Leighton.*

XVII. Industrial Chemistry.—The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis, explosives, and textile coloring. *Four credits, first term. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical Option in Applied Science. Professor Leighton.*

XIX. Physiological Chemistry.—To be given alternate years. Given next in 1919. *Four credits, second term. Required of Seniors and Juniors in Home Economics; option in Applied Science for Seniors. Assistant Professor Smith.*

XX. Assigned Work.—*Three credits, thruout the year. Required of Seniors in Chemical Engineering who do not take the work in the Reserve Officers' Training Corps. Required of Seniors who take the Chemical Option in Applied Science for the first term. Professor Leighton.*

XXI. Reports and Discussion of Chemical Subjects and Recent Investigations.—*Two credits, thruout the year. Required of Seniors in Chemical Engineering; and of Seniors taking the Chemical Option in Applied Science. Professor Leighton.*

XXII. Organic and Physical Chemical Laboratory.—*Two credits, second term. Required of Seniors in Chemical Engineering, and of those who take the Chemical Option in Applied Science. Professor Leighton.*

Drawing,—Freehand

MISS ELDRED

The purpose of the subjects described below is to meet the drawing requirements of the Science laboratories, to give some knowledge of the principles of design and their practical applications, and to develop the appreciation of beauty in nature and in art. For agricultural and applied science students the work comprises outline drawing in pencil, from plant and animal forms and from objects chosen to illustrate the principles of perspective. In the home economics course, greater emphasis is placed upon the principles and practice of design, upon the study of color and color harmony, and upon the application of all these to such problems as

those of costume and the arrangement, furnishing, and decoration of the home. The brief course in the history of art aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. The department has a considerable equipment of illustrative material for this work, including a collection of about one hundred and fifty casts and over three hundred photographs of folio or larger size, with many smaller prints, among them two thousand University Prints, illustrating Greek and Roman sculpture, and the art of Italy, Germany, and the Netherlands.

Subjects

II. Pencil Drawing from Objects.—*One laboratory credit, first term; required of Freshmen in Agriculture. One laboratory credit, thruout the year; required of Freshmen in Applied Science. Two laboratory credits, second term; required of Freshmen in Home Economics. Five laboratory credits, first term; elective for Freshmen.*

III. History of Art.—*Two recitation credits, second term; required of Juniors in Home Economics. Two recitation credits, first term; required of Seniors in Home Economics.*

IV. Color Problems.—*One laboratory credit, second term. Required of Freshmen in Home Economics.*

V. Drawing in Charcoal from Still Life and the Cast.—*Two laboratory credits. Elective.*

VI. Pen-and-Ink Drawing, Water-Color, or Pastel.—*Two laboratory credits. Elective.*

VII. Modeling.—*Two laboratory credits. Elective.*

VIII. Work Illustrating Home Economics VII.—*One laboratory credit, second term. Required of Juniors in Home Economics.*

IX. History of American Art.—*One recitation credit, second term. Elective.*

X. Modern European Art.—*One or two recitation credits, second term. Elective.*

XI. Design.—*One recitation and one laboratory credit, first term. Required of Juniors in Home Economics.*

Economic and Social Science

PRESIDENT EDWARDS

Subjects

I. Economics.—*Text-book, supplemented by lectures, reading, and essays. Three recitation credits, first term; required of Seniors in all courses.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.*

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmers, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations; federation of rural social forces. *Elective.*

Engineering,—Chemical

PROFESSOR LEIGHTON, ASSISTANT PROFESSOR SMITH, MR. PERKINS

The course in chemical engineering is based upon the principles of chemistry and of mechanical and electrical engineering. It is designed to prepare men for those industries in which chemical processes play a vital part. The subjects in chemistry aim to train the student thoroly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the various branches of chemical analysis, and to make him familiar with the practical applications of chemistry. The subjects in mathematics, physics, mechanical and electrical engineering aim to give the training necessary to solve the mechanical and electrical problems that present themselves when chemistry is applied to the industries.

While the primary purpose is to turn out men well equipped to take up any line of chemical engineering, yet, owing to the important textile interests in this state, and the increasing importance of the manufacture of chemicals and dyestuffs, especial emphasis is placed on the manufacture and application of dyes. The following are some of the industries which offer opportunities to the chemist and the chemical engineer:—The manufacture of chemicals and dyestuffs; the bleaching and dyeing of cotton, wool, and silk; the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, sugar, paper pulp, paper, soap, paint and varnish; the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion, or destructive distillation to form gas, coke, and tar, embracing further the whole field of forest products utilization; and the processes of water and sewage purification.

A detailed description of the subjects will be found under their respective departments.

Engineering,—Civil

PROFESSOR WEBSTER

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various fields of civil engineering. With this object in view, application of the theories and principles learned in the classroom is made in the field, laboratory, and drafting room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the students' opportunities, the name of the department has been changed from Highway Engineering to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance of highway engineering in this state and thruout the country in general, considerable emphasis is still placed on this phase of engineering work.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and testing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects.

Subjects.

I. **Surveying.**—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level, and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering, and in Agriculture.*

II. **Topographic Surveying.**—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits, second term. Required of Sophomores in Civil Engineering.*

III. **Railroad Engineering.**—The work consists of a reconnoissance, a preliminary and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates are made. A study is also made of the properties of

curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Five credits, divided between field and recitation as seems advisable, first term. Required of Juniors in Civil Engineering.*

III₂. **Railroad Engineering.**—The principles of economic railroad construction and maintenance; railway appliances, ballast, and roadbed, culverts and trestles, turnouts, sidings, yards, terminals, signaling, locomotive and grade problems, betterment surveys, etc. *Three recitation credits, second term. Required of Juniors in Civil Engineering.*

IV. **Graphic Statics.**—Instruction is given in graphic statics and its application in the design of simple framed structures. *Two recitation credits, first term. Required of Juniors in Civil Engineering.*

V. **Roads and Pavements.**—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction and maintenance of earth, gravel, and macadam roads, together with a discussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the construction of a gravel or macadam road on the college grounds. *Three recitation credits and one field credit, second term. Required of Juniors in Civil Engineering.*

VI. **Bridge Details.**—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *Two laboratory credits, first term. Required of Seniors in Civil Engineering.*

VII. **Bridge Analysis.**—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

VIII. **Bridge Design.**—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits, second term. Required of Seniors in Civil Engineering.*

IX. **Masonry Construction.**—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and a systematic and thoro laboratory course on cement testing is given. *Two recitation credits and one laboratory credit, second term. Required of Seniors in Civil Engineering.*

X. **Reinforced Concrete.**—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XI. **Sewerage.**—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers;

removal of house sewage; the design and construction of sewers and method of sewage disposal. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of waterworks, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitation credits, second term. Required of Seniors in Civil Engineering.*

XIII. Tunneling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit, second term. Elective for Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XV. Assigned Work.—With the advice and consent of the head of department, the student elects three hours' work in the Senior year. This may be research, thesis, or recitation and laboratory work, depending upon the qualifications of the student. *Three credits, thruout the year. Required of Seniors in Civil Engineering.*

XVII. Metal Structures.—The graphic determination of stresses in steel mill buildings. *One laboratory credit, second term. Elective for Seniors in Civil Engineering.*

XVIII. Irrigation Engineering.—This includes a study of the impounding, diverting, flow, and measurement of water, quantity required, canals, canal works, storage reservoirs, waterways, etc. *Three recitation credits, first term. Elective for Seniors in Civil Engineering.*

Engineering,—Electrical

PROFESSOR DICKINSON

The aim of the course in electrical engineering is to give the student such training in the fundamental principles of the subject as will fit him to take up, in an intelligent and effective manner, any line of engineering work requiring special electrical knowledge. Instruction is given in both classroom and laboratory, the aim of each method of instruction being to supplement the other, and to develop resourcefulness and the habit of independent thought on the part of the students.

Subjects.

I. Theory of Direct Currents.—A detailed study of the theory of direct-current apparatus. The theory of dynamos, motors, and auxiliary apparatus. *Three recitation credits, first term. Required of Juniors in Electrical Engineering and of Seniors in Chemical and Mechanical Engineering.*

II. Direct-Current Laboratory.—A series of tests of various types of direct-current apparatus. These include magnetization and characteristic curves of different types of machines, as well as tests for efficiency, regulation, temperature rise, and tests of a similar nature. *Three laboratory credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

III. Principles of Electrical Engineering.—A subject designed to emphasize the fundamental laws of electric and magnetic circuits. Special attention is given to the units employed, and to methods of measurement. Inductance and capacity are studied at considerable length, and their effects in circuits of variable E. M. F. is discussed. *One recitation credit for the last nine weeks of second term, Sophomore year; and one recitation credit for eighteen weeks, first term, Junior year. Required of students in Electrical Engineering.*

IV. Theory of Alternating Currents.—Recitations and lectures. The elements of the theory of alternating currents and of alternating-current machinery. This subject includes the simple theories regarding the action of A. C. dynamos, motors, converters, and transformers. *Two recitation credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical and Civil Engineering.*

V. Theory of Alternating Currents.—Recitations and lectures, continuing subject IV. The more advanced theories regarding the effect of inductance and capacity in A. C. circuits, and of the action of A. C. machinery, are discussed. Assigned readings and reports are a feature of the subject. *Three recitation credits, thruout the year. Required of Seniors in Electrical Engineering.*

VI. Alternating-Current Laboratory.—A series of tests of different types of alternating-current apparatus, such as single and polyphase generators and motors, induction motors, converters, and transformers. *Three laboratory credits, thruout the year. Required of Seniors in Electrical Engineering.*

VII. Design of Electrical Machinery.—General principles of the design of electrical apparatus, including a direct and an alternating current generator. *Three laboratory credits, second term. Required of Seniors in Electrical Engineering.*

VIII. Telephone Engineering.—A consideration of the development of the modern telephone, with special reference to the common battery systems. *One recitation credit, second term. Required of Seniors in Electrical Engineering.*

X. Transmission of Energy.—A study of systems of high-tension distribution, the effect of capacity and inductance, the construction of lines, their protection, and the troubles developing in high-tension work. *Four recitation credits, second term. Required of Seniors in Electrical Engineering.*

XI. Electric Railway Engineering.—A discussion of the economic considerations in the development of an electric railway, methods of construction, the location of the generating station, the design of the distributing system, types of motors, and systems of control. *Two recitation credits, second term. Required of Seniors in Electrical Engineering.*

XII. Assigned Work.—Members of the senior class are required to prepare and to present before the class, papers, discussions, and reports upon topics of interest to engineers. As a rule, each student presents about eight papers in the course of the year's work.

A portion of the assigned time is also devoted to research work, the amount of time so used varying with the nature of the problem, and the ability of the student profitably to utilize the time.

Three laboratory credits, thruout the year. Required of Seniors in Electrical Engineering.

Engineering,—Mechanical

PROFESSOR WALES, MR. ELDRED

It is the object of the work in the department of mechanical engineering to turn out broad-gauged, self-dependent men, well trained in engineering theory, familiar with the practical matters of construction and operation, and having some knowledge of the economic relations which the engineer and industrial development bear to modern society. In the endeavor to train men who will touch life, not at one point, but at many, the work of the department is supplemented and rounded out by extended and vigorous courses along the lines of electrical engineering, physics, mathematics, chemistry, English, history, modern languages, and political economy. The special work of the department of mechanical engineering divides itself naturally into the following general groups: shop practice, design, steam engineering, and experimental engineering. Each of the above groups is amplified and briefly described below:

SHOP PRACTICE

The object of this work is to give familiarity with principles, operations, possibilities, and management, rather than to develop the greatest dexterity in manipulation. Shop practice extends over two years of the course, and comprises forging and foundry work,

pattern making, and machine-tool operation. The shops are exceptionally well equipped with machines and tools of all kinds. In the machine shop are six metal lathes, speed lathes, planes, 16-in. shaper, two drills, two tool grinders, drill grinder, milling machine, punching press, vertical boring and turning mill, together with the usual assortment of tools and auxiliaries. The pattern shop is provided with lathes, circular saw, band saw, jig saw, dowel machine, surface and buzz planers, etc. Fifteen work-benches fully provided with the small tools of the pattern maker complete the equipment. The forge shop is equipped with the usual anvils, forges, fullers, swages, hardies, etc., while a full stock of patterns, shovels, riddles, flasks, and trowels is provided for the work in foundry practice. Enthusiasm is given to the work by the construction of things of real value—a new machine for the shop or a piece of apparatus for the laboratory—instead of spending the whole time on worthless “exercises.”

DESIGN

The work along the lines of design extends thruout the four years, beginning with freehand and mechanical drawing and ending with machine design and power-plant design in the Senior year. Leading up to this final work are the terms of mechanical drawing, descriptive geometry, mechanism, valve gears, dynamics of machines, mechanics, strength of materials, hydraulics, and thermo-dynamics. All the forces of correct theory and the practice of the most successful builders are brought to bear upon the solution of definite, practical problems.

STEAM ENGINEERING

Steam engineering begins in the Junior year and runs thru the remainder of the course. A rigorous study of the mathematical theory of thermo-dynamics supplies the foundation for the study of boilers and engines, design and economy, and the various devices and auxiliaries of the power plant. In the Senior year is considered the particular branch of heating and ventilating. In this year, also, the subject of power plants is taken up, which applies all the previous training in steam engineering, and which brings together and unifies all allied subjects.

EXPERIMENTAL ENGINEERING

This subject, which extends thruout the Junior and Senior years, is intended to fix the theory developed in all the other lines of work. Instruction is given by means of lectures and laboratory tests. The student becomes familiar with the theory, construction, use, and calibration of the instruments and apparatus used by the engineer, and gains experience in making accurate standard and special tests. The work is divided into four groups: one dealing with the chemical problems of engineering—testing of gases, oils, fuels, feed water, etc.; a second, with general calibration and testing; a third, with the study and tests of structural materials; and the fourth, with general power-plant testing. In power-plant testing the students make the necessary plans and preparations, perform the experimental work, and prepare formal reports, with recommendations for improvement in economy, etc. These tests are made not only on the college power-plants, but on those of manufacturing establishments of the State. The equipment for experimental work comprises several boilers and steam engines, large steam pump, gas engines, feed-water heaters, several steam and gas engine indicators, steam calorimeters, tanks, scales, injectors, water turbine, hydraulic ram, pulsometer, centrifugal pump, belt pump, weirs, two-stage air compressor, air-brake outfit, meters, gauges, 50,000-lb. tension and compression machine, apparatus for oil and gas testing, fuel calorimeter, complete outfit for testing cements and concretes, etc. Thruout the work the greatest stress is laid upon the correct calculation and interpretation of results, and accuracy and self-dependence are developed to the fullest.

Subjects.

I. **Mechanical Drawing.**—Lettering, freehand sketching, use of drafting tools, geometrical problems, projections, machine parts. *Four laboratory credits, first term. Required of Freshmen in Engineering.*

II. **Forge and Foundry.**—Forging, drawing, bending, welding, etc. Principles of moulding, core making, and casting. *Two laboratory credits, first term. Required of Freshmen in Engineering. Mr. Eldred.*

III. **Pattern Making.**—Use of tools, bench and lathe work, pattern making. *Two laboratory credits, second term. Required of Freshmen in Engineering. Mr. Eldred.*

V. Descriptive Geometry.—Elementary principles; problems relating to the point, line, plane, cylinder and double curved surfaces of revolution, intersections, and developments. *One recitation and two laboratory credits, second term. Required of all Freshmen in Engineering.*

VI₁. Mechanical Drawing.—Detail and assembly drawings, elementary machine design. *Two laboratory credits, first term. Required of Sophomores in Mechanical, Electrical, Civil, and Chemical Engineering.*

VI₂. Mechanical Drawing.—Continuation of Mechanical Engineering VI. *Two laboratory credits, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.*

VII. Machine Shop.—Hand work in chipping and filing, use of machine tools, construction of machines. *Three laboratory credits, second term; required of Sophomores in Electrical Engineering. One and one-half laboratory credits, second term; required of Sophomores in Civil Engineering. Mr. Eldred.*

VIII. Machine Drafting.—Technique of machine drafting, application of kinematics to the design of gears, valves, linkages, quick-return motions, etc. *Three laboratory credits, first term. Required of Juniors in Mechanical Engineering.*

IX₁. Heat Engineering.—Thermo-dynamics.—Mathematical development and discussion of the laws of thermo-dynamics, and their application to perfect gases, saturated and superheated steam. Theory of air compressors, pneumatic machinery, hot-air engines, gas engines, and refrigerating machines. Boilers, engines, engine economy, effect of cylinder walls, compounding, superheating, use of jackets, varying cut-off, speed, pressure, etc. Flow of fluids, injectors, and thermo-dynamic principles applied to the steam turbine. *Three recitation credits, first term. Required of Juniors in Mechanical, Electrical, and Civil Engineering, and Seniors in Chemical Engineering. Professor Wales.*

IX₂. Heat Engineering.—Continuation of Mechanical Engineering IX. *Three recitation credits, second term. Required of Juniors in Mechanical and Electrical Engineering; and for nine weeks, of Seniors in Chemical Engineering. Professor Wales.*

X₁. Applied Mechanics.—Forces, composition and resolution, parallel forces, moments, couples, centres of gravity, velocity, acceleration, energy and momentum, falling bodies and projectiles, centrifugal force, moment of inertia, radius of gyration, angular momentum, energy of rotating bodies, impact, etc. Solution of practical problems. *Five recitation credits, first term. Required of all Juniors in Engineering. Professor Wales.*

X₂. Applied Mechanics.—Strength of materials, stresses in structures, riveted joints, beam theory, struts, columns, shafting, springs, etc. Solution of practical problems. *Five recitation credits, for six weeks, second term. Required of all Juniors in Engineering. Professor Wales.*

XI. Hydraulics.—General principles, head and pressure, center of pressure, velocity of discharge, flow through orifices and over weirs, Bernouilli's theorem, flow thru pipes, flow thru conduits and canals, energy of flow, horse-power, hydraulic machinery, rams, turbines, centrifugal pumps, and Pelton wheels. Merriman's Treatise on Hydraulics. *Five recitation credits, for last twelve weeks of second term. Required of all Juniors in Engineering.* Professor Wales.

XII. Mechanism.—Instantaneous centers, centroids, lobed wheels, belts, pulleys, four-bar linkage, graphical determination of velocity ratios, quick return motions, straight-line motions, pantographs, trains of gears, epicyclic trains, tooth gearing, epicycloidal and involute teeth, bevel wheels, etc. Schwamb and Merrill's Mechanism. *Three recitation credits, second term. Required of Sophomores in Mechanical and of Seniors in Chemical Engineering.*

XIII. Valve Gears and Dynamics.—Plane slide valves, piston valves, riding cut-off valves; Joy and Marshall gears; Stephenson, Gooch, and Walscheart link motions; drop cut-off valves; Corliss, Brown, and Putnam valves. Peabody's Valve Gears. Lectures and references. *Three recitation credits, second term. Required of Juniors in Mechanical Engineering.*

XIV₁. Machine Shop.—Advanced work in machine construction. *Three laboratory credits, thruout the year. Required of Juniors in Mechanical Engineering.* Mr. Eldred.

XIV₂. Continuation of Mechanical Engineering XIV₁. Same requirements.

XV. Experimental Engineering a.—Lectures and laboratory work in gases, oils, and fuels; flue gas analysis, calculation of air per pound of coal, loss due to excess air and to imperfect combustion; analysis of fuel gases and calculation of heating values; determination of heating values by the Junkers and Parr calorimeters; study of gases in producer and gas-engine work. Analysis of coal and other fuels. Analysis and testing of lubricating and fuel oils. Testing of boiler waters. *One recitation and one laboratory credit, first term. Required of Juniors in Mechanical Engineering.* Professor Wales.

XVI. Experimental Engineering b.—General calibration and testing of engineering instruments and apparatus; gauges; planimeter; manometers; indicators; Prony brakes; scales; valve setting by measurement and by the indicator; Carpenter calorimeter; Peabody calorimeter; flow thru orifices; weirs; nozzles; Pitot tube; meters; Venturi meters; hydraulic ram; turbine, etc. *One lecture and one laboratory credit, second term. Required of Juniors in Mechanical, Electrical, and Civil Engineering.*

XVII. Experimental Engineering c.—Properties of materials. Lectures on the metallurgy of iron and steel; effects of impurities; cold-working; repeated stresses; tensile, compressive and shearing strengths; ductility; resilience, etc.; copper, brass, bronze and other alloys; timber, stone, and brick. The manufacture of natural and Portland cements; effects of over- and under-burning, over-liming, SO_3 , etc., discussion of tests and their interpretation. Laboratory work is parallel with lectures. Tensile strengths of

cast-iron, wrought-iron, and steel; compressive strength of metals, timber, concrete, cement; shearing tests of metals; transverse tests of timber and iron; stress-strain diagram, elastic limit, yield point, modulus of rupture; tensile tests of cement; pat tests, boiling tests; specific gravity; fineness; time of set, etc. Determination of the best proportions of cement, sand, and rock of given characters. *Two lectures and one and one-half laboratory credits, first term. Required of Seniors in Mechanical, Electrical, and Civil Engineering.*

XVIII. Experimental Engineering d.—Hot-air engine, gas engine, steam pump, injectors, transmission dynamometers; boiler tests; complete tests of power plants; outside work on the H. P. of a stream, with tests of hydraulic power plant; outside tests of manufacturing plants, with calculations, reports, and recommendations. *Two laboratory credits, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XIX. Heating and Ventilation.—Discussion of the principles and practice of the various systems of heating and ventilating—direct and indirect, hot-air, hot-water, pressure steam, exhaust steam, vacuum systems, fans, blowers; calculation of ventilation and radiation; flues, pipes, and radiators; air troubles; central heating systems with central power plants; design of heating system for a given building. *One recitation credit, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XX. Machine Design.—Design of machine parts from considerations of the motions involved, strength, rigidity, and friction; design of a complete machine; calculations with design of some type of engine, starting with given requirement of H. P., speed, etc., and with an assumed theoretical indicator card. *Three laboratory credits, thruout the year. Required of Seniors in Mechanical Engineering.*

XXI. Power Plants and Power-Plant Design.—Study of the various types—as to choice, location, installation, and operation; prime movers, their accessories and auxiliaries.

Steam Plants.—Study of the effects on economy, range, and reliability of simple or compound, condensing or non-condensing engines with various valve gears, throttling and cut-off governors, different boiler installations, feed-water heaters, economizers, pressure regulators, pumps, injectors, mechanical stokers, forced and induced draft, chimneys, etc.; calculations of proper sizes, powers, and strengths of machines and apparatus of the power plant; methods of improving economy. The place of the steam turbine in power-plant work.

Hydro Plants.—Discussion of the types of hydraulic machinery, their efficiency, and the particular conditions to which each is best adapted. This will be a development of the previous work in hydraulics to meet the need of the power engineer.

Gas-Producer Plants.—The different suction and pressure producers, theory, capacity, future, etc.; gas engines, from both the thermo-dynamic and the mechanical points of view. *Two lecture credits and one laboratory credit,*

first term; required of Seniors in Mechanical Engineering. Two lecture credits, first term; required of Seniors in Electrical Engineering. Professor Wales.

XXII₁. Assigned Work.—This may be of the nature of research or of specialized study along some particular line of engineering. Options are offered in theory of elasticity, advanced hydraulics, etc. *Three credits, thruout the year. Required of Seniors in Mechanical Engineering.*

XXII₂. Continuation of XXII₁. Same requirements.

XXIII. Dynamics of Machines.—Analysis of stresses, effects of inertia, balance, reciprocating parts, flywheels, design of high-speed engines and machinery. *Two recitation credits, second term. Required of Seniors in Mechanical Engineering. Professor Wales.*

XXVI. Business Organization and Management.—The organization of engineering industries, and the laws and methods of business applying to them. *Three lecture credits, second term. Required of Seniors in Mechanical and Chemical Engineering. Professor Wales.*

English

Literature, Composition, and Rhetoric.

PROFESSOR BOARDMAN, PROFESSOR CHURCHILL, MISS PECK

The English department offers subjects in literature and in rhetoric and composition, both written and oral. The required work extends over the four years. Elective subjects in literature are provided for Juniors and Seniors. Both literature and composition subjects place emphasis on the practical and the contemporary phases of the work.

The library is an important factor in the work of the department, as it contains some twelve hundred volumes of representative English and American literature.

Subjects in Literature

IV. Modern Essays.—Study of representative essays of England and America in the 19th and 20th centuries. *Three recitation credits, first term. Required of all Juniors not in Reserve Officers' Training Corps.*

V. Shakspeare.—A course in appreciation, including lectures on the life of Shakspeare, reading of several plays, and careful study of three plays. *Three recitation credits, second term. Required of Seniors in Agriculture, Applied Science, and Home Economics.*

VI. Literature and Composition.—In kind and amount according to individual need. *Not less than two recitation credits, first term. Elective for Freshmen.*

VII. The English Novel.—Study of the development and technique of the novel in England. *Two recitation credits, second term. Elective as an*

extra for Juniors and Seniors, with credit in Applied Science and Home Economics courses.

XI. American Poetry.—An appreciative reading study of American Poetry as a whole, using Stedman's "An American Anthology" as a basis for the work. *Two recitation credits, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics courses.*

Rhetoric and Composition

I. Rhetoric and Composition.—Outlines of rhetorical theory, study of models illustrating the various literary forms, exercises, weekly themes. *Three recitation credits, thruout the year. Required of Freshmen in all courses.*

II. Newspaper Work.—The technique of structure and style as applied to newspaper methods. Daily practice, special emphasis on editorial paragraph writing, based on the study of current events. *One recitation credit, first term. Required of Sophomores in all courses.*

III. Argumentation.—Theory and Practice. Training in the principles of brief-drawing; weekly practice in extemporaneous speaking and debating. *Two recitation credits, second term. Required of Sophomores in all courses.*

VIII. Interpretive Reading.—Training in the fundamental principles of pronunciation, articulation, emphasis, inflection, phrasing, quality, force, pitch, rhythm. Besides the ultimate practical purpose, this course is intended to give the necessary preparation for effective public speaking in the courses in debate and oratory during the Junior and Senior years. *One recitation credit, first term. Required of Sophomores in all courses.*

IX. Debating.—Instruction and practice in the art of debate. *One recitation credit, first term. Required of Juniors in all courses.*

X. Oratorical Writing and Extemporaneous Speaking.—Critical study of representative English and American orations as models; weekly practice in extemporaneous speaking and in the technique of oratorical writing. Criticism on the construction of one long oration. *One recitation credit, first term. Required of Seniors in all courses.*

Geology

MR. PERKINS

GEOLOGY—Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to those characteristics of rocks which are of chief importance in connection with road construction.

I. **Geology.**—*Two recitation credits, second term. Required of Juniors in Civil Engineering and Sophomores in Agriculture and Applied Science.*

History

PRESIDENT EDWARDS, PROFESSOR CHURCHILL

I. **Social, Economic, and Industrial History of the United States.**—*Three recitation credits, second term. Required of all Juniors not in Reserve Officers' Training Corps.*

II. **Government and Politics in the United States.**—*Three recitation credits, second term. Elective.*

Home Economics

PROFESSOR BEMIS, MISS ANDERSON

The aim of this department is to give both theoretical and practical training in the economic administration of the home. The laboratory is situated in a building by itself, which is finished and furnished in such a manner as to demonstrate the sanitary principles involved in proper kitchen arrangements. It is amply equipped with the most recent scientific cooking-apparatus, inclusive of thermometers, metric scales, different kinds of stoves, and individual utensils. The work in chemistry, biology, etc., is, however, carried on in the laboratories of those departments. There is a good home economics library, and students are expected to make intelligent use of the main library in reference work, as well as to study those bulletins of the Department of Agriculture and such state reports as deal particularly with the subjects of food and nutrition.

1₁. **Garment Making.**—Instruction and practice in hand sewing, use of the sewing machine, pattern drafting, and adaptation of commercial patterns, applied to making of undergarments and simple wash dresses. *Three laboratory credits, first term. Required of Freshmen in Home Economics.*

1₂. **Garment Making.**—**Continuation of Home Economics I₁.**—*Three laboratory credits, second term. Required of Freshmen in Home Economics.*

III. **Hygiene.**—Factors relative to the general health and care of the body with a brief consideration of anatomy and physiology. *One recitation credit, first term. Required of all women Freshmen.*

IV₁. **Foods.**—Sources, manufacture, and chemical composition of foods and the relation of the principles of chemistry, physics, biology, and bacteriology to the cookery processes and digestion of foods; selection and

combinations of foods, their comparative nutritive and economic values and their place in the diet. *One recitation and three laboratory credits, first term. Prerequisite: Chemistry I and II. Required of all Sophomores in Home Economics.*

IV₂. **Foods.**—Continuation of Home Economics IV₁. *One recitation and three laboratory credits, second term. Required of all Sophomores in Home Economics.*

VI. **Nutrition.**—The study of digestion and metabolism under conditions of health; variations in the diet necessary in pathological conditions and dietetic treatment in certain diseases. *Two recitation and one laboratory credit, second term. Prerequisite: Home Economics VIII. Required of Seniors in Home Economics.*

VII. **House Planning and Furnishing.**—Evolution of the house, its adaptation to modern conditions, principles involved in planning, furnishing and decorating the house from the standpoint of convenience, economy, health, and art. *One recitation and one laboratory credit, second term. Required of Juniors in Home Economics.*

VIII. **Dietetics.**—Nutritive value of foods and the daily food requirements; dietary studies based on family budgets of varying incomes; the making of menus and preparation of meals. *Two recitation and one laboratory credit, first term. Prerequisites: Chemistry IV, Zoölogy X, Home Economics IV. Required of Juniors in Home Economics.*

IX. **Sanitation.**—Study of location of the house, heating, lighting, water supply, plumbing, and care of the house with reference to health, convenience, and cost. Public sanitation as it relates to the household is considered. *Two recitation credits, first term. Required of Juniors in Home Economics.*

XII. **Home Nursing.**—Suitable furnishing and arrangement for the sick room; care of patient—bathing, moving, feeding, etc; first aid and emergency measures; hygiene of infectious and contagious diseases; care of infants and children. *Two recitation credits, first term. Required of Juniors in Home Economics.*

XIV. **Assigned Work.**—Study of recent investigations in nutrition and consideration of problems in chemistry, bacteriology, or physics allied to home economics. *One recitation and one laboratory credit, second term. Prerequisites: Home Economics VI. Required of Seniors in Home Economics.*

XV. **Teaching.**—A study of methods, curricula, and equipment, and the making of lesson plans; observations and criticisms followed by supervised teaching. *One recitation and one laboratory credit, first term. Required of Seniors in Home Economics.*

XVIII₁. **Dressmaking.**—Consideration of quality, suitability, and cost of materials used in making simple wool and silk dresses. Adaptation of art principles in selection of designs. *Two laboratory credits, first term. Required of Sophomores in Home Economics. Prerequisites: Home Economics I₁ and I₂.*

XVIII₂. Continuation of XVIII₁. *One recitation and two laboratory credits, second term. Required of Juniors in Home Economics.*

XXI. **Home Administration.**—Care of home, planning and executing daily and weekly routine for group of five; division of income and making of budgets; planning and serving meals on given cost, and consideration of service for simple and more formal occasions. *One recitation and two laboratory credits, first term. Required of Seniors in Home Economics. Prerequisite: Home Economics VIII.*

XXII. **Millinery.**—Designing and constructing of frames, covering, finishing and trimming of frames, and making over old hats. *One laboratory credit, second term. Required of Sophomores in Home Economics.*

XXIII. **Textiles.**—Development of the textile industries, the manufacture of fabrics, and woman's place in home industry with reference to clothing and textiles. *Two recitation credits, second term. Required of Freshmen in Home Economics.*

XXV. **Costume Design.**—A study of line, color, and ornament in dress; designing and draping of patterns; and practice in making an evening dress. *Two laboratory credits, first term. Required of Seniors in Home Economics. Prerequisites: Home Economics I, XVIII₁ and XVIII₂.*

XXVI. **Textiles and Clothing Economics.**—Artistic and economic considerations in selection and purchase of materials for clothing and household furnishing, with emphasis on identification of textile materials, as to price, width, and weave; economic and social conditions which affect their value. Study of clothing budgets. *One laboratory credit, second term. Required of Seniors in Home Economics. Prerequisites: Home Economics I₁ and I₂, XXIII.*

HORTICULTURE

MR. CORRIVEAU, MR. GODIN

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the horticultural building. The main building contains the office and recitation rooms, together with photographic rooms. Attached to this building are greenhouses of modern construction, containing over 8,000 square feet under glass, 3,000 square feet of which is used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords the student an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens, and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity for the study of apples and pears especially.

A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects.

I. Propagation of Plants.—Different methods, including seed testing. Soft, green, and hardwood cuttings. Layering, grafting, and budding. *One recitation and one laboratory credit, first term. Required of Freshmen in Agriculture. Option for Juniors in Applied Science.*

II. Vegetable Gardening.—Underlying principles and types of vegetable gardening; study of individual crops; text-book work. *Two recitation credits, second term. Required of Freshmen in Agriculture; option for Seniors in Applied Science.*

III. Fruit Culture.—Fundamental principles of orcharding; soil, fertilizer, and cultivation. Methods of laying out orchards and planting. Tillage, pruning, and spraying. Harvesting and storing fruits. Collateral reading and practical work. *Two recitation credits, first term. Required of Juniors in Agriculture.*

IV. Spraying and Pruning.—Preparation and application of spray mixtures; insecticides and fungicides. Methods of application for different orchard enemies, and machinery used. Pruning of trees and ornamental shrubs. *One recitation and one laboratory credit, second term. Required of Freshmen in Agriculture; option for Juniors in Applied Science.*

V. Greenhouse Construction and Management.—Study of the different types of glasshouse structures; methods of heating and ventilating. *One recitation and two laboratory credits, second term. Option for Juniors in Agriculture.*

VI. Floriculture.—History of floriculture. Study of greenhouse plants, collectively and individually; practical work in propagation, potting, watering, ventilating, fumigating, and spraying. Study of bulbs, bedding plants, palms and ferns. *One recitation and two laboratory credits, entire year. Option for Seniors in Agriculture. Prerequisite: Horticulture V.*

VII. Horticulture By-Products.—Principles of canning and preserving fruits, manufacture of fruit juices and butters, cider, vinegar, evaporated fruits, pickles, sauces, jams and jellies. The aim of this course is to equip the student with a knowledge of the means of converting surplus and low grade horticultural products into salable manufactured goods so as to make profits where losses might otherwise occur. *Two recitation credits, first term. Elective for Seniors in Agriculture. Prerequisite: Hort. III or Hort. XVII.*

VIII. Literature of Horticulture.—See Agronomy IX.

IX. Assigned Work.—Special subjects chosen by the student. *Option for Seniors in Agriculture. Hours to be arranged.*

X. **Pomology.**—Orchard and bush fruits. Study of types; origin, and history; classification, description, and methods of handling. Orchard management. *One recitation credit and two laboratory credits, thruout the year. Option for Seniors in Agriculture and Applied Science. Prerequisite: Horticulture III.*

XI. **Advanced Vegetable Gardening.**—Study of one or more crops selected by student. Practical work, research work, and text-book. *One recitation credit and two laboratory credits, second term. Elective for Seniors in Agriculture.*

XII. **Plant Breeding.**—See Agronomy XI.

XVI. **Landscape Gardening.**—This subject is designed for students in general and, consists of the rules and principles governing landscape gardening, the design and laying out of grounds for farm, village, and city places, making of lawns, flower beds, etc. *One recitation and two laboratory credits, first term. Required of Juniors in Agriculture. Prerequisite: Botany III.*

XVII. **Small Fruits and Grapes.**—The strawberry, raspberry, blackberry, dewberry, currant, gooseberry, grape. History; extent of cultivation; and management in home and commercial plantations. *Two recitation and one laboratory credit, second term. Given in alternate years, 1918, 1920. Option for Juniors and Seniors in Agriculture.*

A. **Vegetable Gardening.**—Fundamental principles of vegetable growing. Practical work in cold frames, hotbeds, and garden planting. *Three recitation credits and one and one-half laboratory credits, second term. Required of Short-Course students in Agriculture, second year.*

B. **Fruit Culture.**—Study of fruits; propagation; planning fruit gardens and plantations; harvesting and packing; care. *Three recitation credits and one laboratory credit, first term. Required of Short-Course students in Agriculture, second year.*

E. **Spraying and Pruning.**—A study of the methods used in combating insect pests and plant diseases. Preparation and application of fungicides and insecticides. Study of nozzles, pumps, etc. *Two recitation and one and one-half laboratory credits, second term. Required of Short-Course students in Agriculture, second year.*

F. **Home Grounds.**—A study of the materials to use, the essential principles of the art. Practice in designing, planting, and care of home grounds. *Three recitation credits, second term. Required of Short-Course students in Agriculture, second year.*

G. **Propagation of Plants.**—A study of the different methods of plant propagation. *One laboratory credit, first term, second year. Required of Short-Course students in Agriculture.*

Languages, Modern

MISS MYRICK, MISS PECK

FRENCH

I. **Elementary French.**—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits, thruout the year.*

II. **Reading of intermediate texts.**—Composition, conversation, first term; Introductory Scientific French, second term. *Three recitation credits, thruout the year.*

III. **Classical and Scientific French.**—*Three recitation credits, thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. **Advanced Scientific French.**—*Three recitation credits, thruout the year. Elective for students who have completed II and III.*

V. **Military Spoken French.**—*Two recitation credits, thruout the year. Elective for students in the Reserve Officers' Training Corps.*

GERMAN

I. **Elementary German.**—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits, thruout the year. Required of students in Applied Science when German is not offered for entrance.*

II. **Introductory Scientific German.**—*Five recitation credits, second term. Required of Sophomores in Applied Science, and Chemical Engineering.*

III. **Scientific German.**—*Three recitation credits, thruout the year. Elective for students who have completed I and II or their equivalents.*

SPANISH

I. **Elementary Spanish.**—Grammar, pronunciation, reading, composition, conversation. *Three recitation credits, thruout the year.*

II. **Modern Prose.**—Conversation, composition, reading of modern prose with practical vocabulary. Commercial correspondence. *Three recitation credits, thruout the year.*

III. **Commercial Spanish.**—Reading of fac-simile business correspondence, writing of business letters, conversation. Reports in Spanish on commercial subjects and trade development. (Conducted in Spanish). *Three recitation credits, thruout the year.*

Mathematics

PROFESSOR TYLER, ASSISTANT PROFESSOR BILLS

Subjects.

I. **College Algebra.**—*Five recitation credits, nine weeks, first term. Required of Freshmen in Engineering and Applied Science.* Professor Tyler, Assistant Professor Bills.

II. **Trigonometry.**—*Five recitation credits, nine weeks, first term. Required of all Freshmen.* Professor Tyler, Assistant Professor Bills.

III. **Higher Algebra.**—*Five recitation credits, nine weeks, first term. Required of Freshmen in Agriculture and Home Economics.* Assistant Professor Bills.

VIII. a. **Trigonometry completed and Analytics.**—*Five recitation credits, second term. Required of Freshmen in Engineering.* Professor Tyler, Assistant Professor Bills.

VIII. b. **Trigonometry completed and Elementary Analysis.**—*Four recitation credits, second term. Required of Freshmen in Applied Science.* Assistant Professor Bills.

X. **Calculus.**—*Five recitation credits, first term. Required of Sophomores in Engineering.* Professor Tyler.

XI. **Calculus (completed).**—*Five recitation credits, second term. Required of Sophomores in Engineering.* Professor Tyler.

XIV. **Spherical Trigonometry.**—*One recitation credit, first term. Elective as an extra.*

XV. **Solid Analytics.**—*One recitation credit, second term. Elective as an extra.*

Military Science and Tactics

CAPTAIN DOVE

All male college students are required to take military instruction during the first two years unless excused by reason of physical disability. During this period they are enrolled in the Reserve Officers' Training Corps. During the remainder of their period in college they may continue in the military department or take physical training instead.

Under an Act of Congress approved June 3, 1916, units of the Reserve Officers' Training Corps may be established at civil educational institutions, with the primary object of qualifying, by systematic and standard methods of training, young men for reserve officers of the United States Army.

The system of instruction as prescribed presents to the students a standardized measure of that military training which is necessary in

order to prepare them to perform intelligently the duties of commissioned officers in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers.

Under the provisions of the National Defense Act of June 3, 1916, as published in General Orders No. 49, War Department, 1916, any student who has completed two academic years of service in the Reserve Officers' Training Corps, and has been selected for further training by the president of the institution and by its professor of military science and tactics, and who has agreed in writing to continue in said Corps for the remainder of his period in college, devoting five hours per week to the prescribed military training, and who further agrees to take the prescribed camp training, may be furnished with an allowance for subsistence amounting to about \$85 per year.

When a unit of the Reserve Officers' Training Corps has been established at an institution, the Quartermaster's Corps of the Army will issue or provide one complete olive drab regulation uniform for each student undergoing instruction. It is also the policy of the War Department to issue for each unit of the R. O. T. C. the latest model rifle and equipment, in so far as the supply and the appropriations of Congress permit.

The War Department has ruled that the prescribed courses in camp training shall consist of two camps of four weeks each, one at the end of the junior year and the other subsequent to graduation. As at present scheduled, these camps are to be held at Plattsburg, N. Y., during the summer.

Any member of the Reserve Officers' Training Corps who has attended one or more such camps during the first two years of his service in the corps may be given credit therefor.

Subsistence while in camp, and railroad fare to and return will be paid by the United States. Extra articles of uniform necessary for camp will also be furnished.

Upon the completion of all required work in connection with the Reserve Officers' Training Corps graduates will be commissioned as reserve second lieutenants of the Army.

In order to provide for additional training for reserve officers the National Defense Act contained the following paragraph: "Sec. 52. The President alone is hereby authorized to appoint and commission

as a temporary second lieutenant of the Regular Army in time of peace for purposes of instruction, for a period not exceeding six months, with the allowances now provided by law for that grade, but with pay at the rate of \$100 per month, any reserve officer appointed pursuant to sections forty-nine and fifty-one of this act, and to attach him to a unit of the Regular Army for duty and training during the period covered by his appointment as such temporary second lieutenant, and upon the expiration of such service with the Regular Army such officer shall revert to his status as a reserve officer."

It should be noted, however, that this six months' service is optional and not compulsory, and further that there is no obligation on any student beyond the prescribed military training in college and the two summer camps.

In case a graduate wishes to take the six months' training in the Regular Army, as mentioned above, immediately upon finishing his college course, the second camp period may be included in the six months.

Any further information in regard to the provisions of the Reserve Officers' Training Corps may be obtained from the president or the professor of military science and tactics.

The prescribed uniform must be worn at all practical exercises.

Subjects

I. **Military Art.—Practical.**—(a) *First Year.* Physical drill; Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad, Company, and Battalion close and extended order; preliminary instruction in sighting and aiming drills; gallery practice; nomenclature and care of rifle and equipment; ceremonies; manuals; bayonet combat; intrenchments; first-aid instruction; target practice. (b) *Second Year.* Same as (a), combat and collective firing in indoor ranges if possible; signaling; work with sand table. (c) *Third Year.* Duties consistent with rank as cadet officers or non-commissioned officers in connection with (a) and (b); military sketching. (d) *Fourth Year.* Same as (c). *Two exercises of one hour each, counting as one credit for each term. Required of all male Freshmen and Sophomores, and all Juniors and Seniors taking the advanced course in the Reserve Officers' Training Corps.*

II. **Military Art.—Theoretical.**—*First Year.* Theory of target practice; military organization; service of information; service of security; map reading; lectures on general military policy as shown by military history of the United States and military obligation of citizenship; combat (to be illustrated by small tactical exercises); Infantry Drill Regulations, to include School of the Company; camp sanitation for small commands; personal hygiene. *One recitation credit thruout the year. Required of all Freshmen.*

IV. **Military Art.—Theoretical.**—*Second Year.* Infantry Drill Regulations, to include School of Battalion and Combat; Small Arms Firing Regulations; lectures as in II; map reading; marches and camps; camp sanitation and camp expedients; military history (recent); service of security and information (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping). *One recitation credit thruout the year. Required of all Sophomores.*

V. **Military Art.—Theoretical.**—*Third Year.* Minor tactics; field orders; map maneuvers and problems; company administration (papers and returns); property accountability; method of obtaining supplies and equipment; military history; elements of international law. *Three recitation credits thruout the year. Required of all Juniors in the Reserve Officers' Training Corps.*

VI. **Military Art.—Theoretical.**—*Fourth Year.* Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings; international relations of America; gradual growth of the principles of international law embodied in American diplomacy, legislation, and treaties; psychology of war; general principles of strategy only, planned to show the intimate relationship between the statesman and the soldier; military history and policy; the rifle in war. *Three recitation credits thruout the year. Required of all Seniors in the Reserve Officers' Training Corps.*

Physics

PROFESSOR DICKINSON, ASSISTANT PROFESSOR COGGINS

Physics is regarded as a fundamental science, a mastery of which is essential to success in engineering or in any calling involving the application of scientific methods and processes. Therefore emphasis is placed upon the practical applications of the principles involved, not only for the purpose of affording preparation for future work, but with the idea of stimulating the student to an interest in his professional work.

At the same time, some effort is made to present the subject from the standpoint of a pure science, and to instill in the student a respect for scientific methods, and to prepare him for advanced work in research and investigation. Advanced mathematics is employed, wherever its use is deemed necessary for a rigorous and complete development of the subject.

Instruction is given in both class-room and laboratory, the two methods being closely correlated. The department is well equipped with high grade apparatus, much of which has been recently imported. In mechanics, special attention is given to problems involved in the application and transmission of power.

In the laboratory of heat measurements, the problems involved in the transformation of heat into useful energy are strongly emphasized.

In light, the department is able to carry on work of the usual college grade, being well equipped with high grade photometers, spectrometers, interferometers, and refractometers.

The laboratory of electrical measurements is particularly well equipped for the carrying on of advanced work.

Subjects

I. **Descriptive Physics.**—Designed for students in Agriculture and Home Economics. The subject furnishes an excellent foundation for further work in physics. *Five recitation credits, second term. Required of Sophomores in Agriculture and Home Economics.*

II. **General Physics.**—A mathematical treatment of the subject, in which a knowledge of elementary physics is presupposed. *Four recitation credits, thruout the year. Required of all Sophomores in Engineering and Applied Science.*

III. **Laboratory Physics.**—A series of physical measurements intended to teach students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits, thruout the year. Required of Sophomores in Engineering and Applied Science.*

V. **Electrical Measurements.**—Direct-current measurements, resistance, potential, current, magnetic properties of iron and steel, calibration of direct-current instruments. *One and one-half laboratory credits, first term. Required of Juniors in Electrical Engineering.*

VI. **Principles of Illumination.**—A study of different sources of light, photometrical measurements, and the principles of illuminating engineering. *One recitation credit and one and one-half laboratory credits, first term. Required of Juniors in Electrical Engineering.*

Physical Training

MISS BAILEY

All women students are required to attend the gymnasium exercises. These are designed to improve the general health of the young women and to train them in agility, poise, and general gracefulness, and to develop alertness and a ready response to any order or request. The exercises are confined to the lighter work of a gymnasium because of a lack of other equipment.

I. Marching; free arm exercises; wand and dumb-bell exercises; Indian club swinging. *One laboratory credit, thruout the year. Required of all women students.*

Psychology and Education

PROFESSOR BOARDMAN

The subjects in education provide instruction in school law and management, in theory as derived from general and educational psychology, and in the principles and history of education. As a part of the work visits are made to neighboring elementary and secondary schools for the purpose of observing the technique of the recitation with special reference to the courses in science.

Subjects

I. History of Education.—Study of educational theory and practice from the historical point of view, with reference to modern scientific and industrial education. *Three recitation credits, second term. Required in Applied Science: elective in Home Economics and Agriculture. Next given in 1919-20.*

II. Principles of Education, School Law and Administration.—Study of the principles and methods of teaching and administration, and of Rhode Island school law. *Three recitation credits, first term. Required in Applied Science: Elective in Home Economics and Agriculture. Next given in 1918-1919.*

III. Secondary Education.—Principles of teaching, with special reference to the aims of the secondary schools, organization, management, and method in the high school. *Three recitation credits, second term. Required in Applied Science: elective in Home Economics and Agriculture. Next given in 1918-1919.*

IV. General Psychology.—Structure and functions of mental life; simple experiments. *Three recitation credits, first term. Required in Applied Science and Home Economics: elective in Agriculture. Next given in 1919-1920.*

VIII. How to Study.—A practical course, based on psychological principles, designed to increase the efficiency of students. *One recitation credit, first nine weeks of the first term. Required of all Freshmen.*

Zoölogy

PROFESSOR BARLOW

The work in this department is designed to meet the needs of two classes of students, those who are interested in the economic aspect of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic importance of the different orders. Much time is allotted to entomology, and in this subject special attention is given to injurious species. For those who are to be teachers, a thoro training is given in the morphology and

classification of animals as a preparation for the more special subjects that follow. In these, attention is directed to the habits and relations of animals, which are studied both in the field and laboratory.

The laboratory is equipped with a series of charts, valuable models, and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about one hundred cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes. The necessary instruments for laboratory work can be procured at small cost at the college store.

Subjects

I. **Invertebrate Zoölogy.**—A course in the morphology and classification of invertebrates. *One recitation and three laboratory credits, second term. Option for Juniors and Seniors in Applied Science.*

II. **General Zoölogy.**—Lectures and field work on the distribution and habits of animals. Special studies of local areas and typical animal communities. *One lecture credit and one and one-half laboratory credits, second term. Option for Seniors in Applied Science.*

IV. **Economic Entomology.**—*One laboratory credit and three recitation credits, second term. Option for Juniors in Agriculture and Applied Science.*

V. **General Entomology.**—*Two laboratory credits and one recitation credit, first term; two laboratory and two recitation credits, second term. Option for Seniors in Applied Science.*

VI. **Systematic Entomology.**—*Three or five laboratory credits per week thruout the year. Elective for those who have taken or are taking Zoölogy V.*

VIII. **Histology and Embryology.**—*Three laboratory and two recitation credits, first term. Required of Juniors in Home Economics; option for Juniors in Applied Science.*

IX. **Bird Life.**—Field study of native birds. *One and one-half laboratory credits, second term. Elective.*

X. **Vertebrate Zoölogy.**—Structure and physiology of vertebrates. *Two recitation credits and two laboratory credits thruout the year. Required of Sophomores in Agriculture, Home Economics, and Applied Science.*

A. **Elementary Economic Zoölogy.**—Injurious insects are chiefly studied. *Two recitation credits thruout the year, Short Course in Agriculture.*

STUDENT ORGANIZATIONS

Student Council

DANIEL J. LYNCH, JR.....	President
JAMES J. DEVINE	Vice President
JOHN J. DOWLING	Secretary and Treasurer

The Beacon

HANNAH A. STILLMAN	Editor-in-Chief
RALPH E. BRIERLEY	Managing Editor
VERNON J. WILBOURN	Business Manager

Young Women's Christian Union

HANNAH A. STILLMAN	President
PRISCILLA D. SMITH	Vice President
ISABELLA ASHCROFT	Secretary
ESTHER L. KINNEY	Treasurer

Young Men's Christian Association

EARL S. DAY	President
MILTON W. GARDINER	Vice President
SHERBURNE P. SWEETLAND	Secretary
ROLAND T. PIHL	Treasurer

Loyalty League

ISABELLA ASHCROFT	President
MERRILLA A. IRONS	Vice President
E. LUCILE KOHLBERG.....	Secretary and Treasurer

Dramatic Club

SPRAGUE S. BAKER	President
IRMA R. EDMISTON	Vice President
MILDRED E. EDWARDS	Secretary

BATTALION ORGANIZATION, OCT. 1, 1917

Two Companies of Infantry

COMMANDANT

WILBUR E. DOVE, Captain United States Army, Retired

Cadet Officers and Non-commissioned Officers

Major	<i>Vacancy</i>
First Lieutenant and Adjutant.....	JAMES A. MITCHELL
Sergeant-Major.....	LESTER E. WELLS
Color Sergeant.....	EDWARD L. CARPENTER
Color Sergeant.....	ARTHUR H. F. MEYER
Supply Sergeant.....	MICHAEL V. CREEDON

Company "A"

Captain	HENRY BARTON, JR.
First Lieutenant.....	NELSON E. BLAKE
Second Lieutenant.....	HAROLD A. GARDNER
Second Lieutenant.....	LORNE A. CAMERON
First Sergeant.....	MAURICE V. MURPHY
Supply Sergeant.....	STANLEY W. CLARY
Sergeant.....	LESTER D. GROVES
Sergeant.....	KENNETH L. NORTHUP
Sergeant.....	RAYMOND J. RIOUX
Sergeant	<i>Vacancy</i>
Corporal.....	DANIEL O. CARGILL
Corporal.....	EDMUND C. EASTWOOD
Corporal.....	VERNON J. WILBOURN
Corporal.....	EDWARD H. GAMBLE
Corporal.....	IRVING GOLDSTEIN
Corporal.....	JOHN D. WILEY
Corporal.....	PHILIP M. CARPENTER

Company "B"

Captain.....	DANIEL J. LYNCH
First Lieutenant.....	JAMES J. DEVINE
Second Lieutenant.....	JAMES R. WALSH
Second Lieutenant.....	JOSEPH WANSKER
First Sergeant.....	CHARLES F. O'BRIEN

Supply Sergeant.....	RALPH E. BRIERLEY
Sergeant.....	SPRAGUE S. BAKER
Sergeant.....	JAMES E. KNOTT
Sergeant.....	THURSTON W. PETERSON
Sergeant.....	ALBERT S. HUDSON
Corporal.....	DANIEL B. MCKENZIE
Corporal.....	SAMUEL H. COHEN
Corporal.....	EARL W. REID
Corporal.....	RUDOLPH H. KOHLBERG
Corporal.....	CHARLES M. SULLIVAN
Corporal.....	JOHN J. DOWLING

Reserve Officers' Training Corps

Advanced Course

Seniors

Henry Barton, Jr.	Daniel J. Lynch
Nelson E. Blake	Arthur H. F. Meyer
Lorne A. Cameron	James A. Mitchell
James J. Devine	Milton Torgan
Lester D. Groves	James R. Walsh
Charles W. Haggarty	Joseph Wansker
Charles E. Lermond	Lester E. Wells

Juniors

Sprague S. Baker	Albert S. Hudson
Thomas Bartlemo	James E. Knott
Theodore A. Benish	Rudolph H. Kohlberg
Ralph E. Brierley	Howard E. Marx
Daniel O. Cargill	Daniel B. McKenzie
Edward L. Carpenter	Maurice V. Murphy
Philip M. Carpenter	Kenneth L. Northup
Stanley W. Clary	Charles F. O'Brien
Samuel H. Cohen	Thurston W. Peterson
Michael V. Creedon	Earl W. Reid
John J. Dowling	Raymond J. Rioux
Edmund C. Eastwood	Charles M. Sullivan
Edward H. Gamble	William T. Tweedell
Harold A. Gardner	Frederick E. Walker
Irving Goldstein	George L. Waugh
Charles T. Hildreth	Vernon L. Wilbourn

Basic Course

Men of Sophomore Class

Men of Freshman Class

PRIZES AND HONORS

PHI KAPPA PHI

In the spring of 1913 was organized at the Rhode Island State College a chapter of Phi Kappa Phi, a national scholarship society, whose purpose, as stated in the preamble of the constitution, is "to provide a Fraternity, dedicated to the Unity and Democracy of Education, and open to honor graduates of all departments of American Universities and Colleges."

The national society was founded at the University of Maine, in 1897. Since then, the number of chapters has increased to fourteen, in the following states, respectively: Alabama, Delaware, Florida, Georgia, Iowa, Kansas, Maine, Massachusetts, Nebraska, Nevada, North Dakota, Pennsylvania, Rhode Island, Tennessee. The total membership is 2261.

Since the organization of the local chapter in 1913, from Faculty, Alumni and Seniors the following have been elected to membership, and this number will be added to from year to year by the selection of honor students who become eligible in successive senior classes:

CHARTER MEMBERS

Burt L. Hartwell	Herman Churchill
Virgil L. Leighton	Samuel H. Webster
Royal L. Wales	John Barlow

FACULTY MEMBERS SUBSEQUENTLY ELECTED

Howard Edwards	Lester W. Boardman
Philip B. Hadley	Alta M. Bailey
Philip H. Wessels	Leonard P. Dickinson

ALUMNI MEMBERS

George E. Adams	Kate Grace Barber
George A. Rodman	Warren Goddard, Jr.
George M. Tucker	Edith Cecilia Keefer
A. C. Scott	Walter S. Rodman
Howland Burdick	Jean Gilman
H. E. B. Case	Nellie A. Harrall
W. C. Clark	Marion G. Elkins
Blyden E. Kenyon	John K. Lamond
Arthur A. Denico	Harry R. Lewis
Latham Clarke	Clesson H. Field

Henry N. Barlow
 Walter Doll
 Allae C. Slater
 Marguerite W. Elkins
 Dorothy D. Elkins
 Ralph I. Alexander
 James H. Aldred
 Harold W. Browning
 Lorenzo F. Kinney, Jr.
 Helen W. Ford
 Herbert A. Fiske
 Rhobie L. Cargill
 Paul S. Burgess
 David E. Worrall

Norman H. Borden
 Wesley C. Miller
 Robert W. Belfit
 Leroy A. Whittaker
 Charles E. Seifert
 Solomon Fine
 Henry H. Broadfoot
 Henry A. Bartels
 Samuel E. Lawrence
 Hannah A. Stillman
 Dorothy E. Haskell
 Samuel L. Rodman
 H. Kenneth Wilder

THE BURCHARD CUP

In 1912 the Honorable Roswell B. Burchard presented to the college a handsome silver cup to be used as a fraternity scholarship trophy. Each year the fraternity or other organized group of students whose average scholarship grade stands highest, wins the honor of having its name inscribed on the cup. When any fraternity has achieved this distinction for three consecutive years, it thereby secures permanent ownership of the cup. In 1914 and in 1915 Beta Phi won the honors, in 1916 Lambda Chi Alpha, and in 1917 Rho Iota Kappa.

Honors Awarded Commencement Day, June 17, 1917:

Based on the work of the first term, because of the enlistment of men for military service before the close of the second term.

FINAL HONORS FOR FOUR YEARS:

HIGH HONORS Henry Harrington Broadfoot

HONORS Samuel Lyman Rodman
 Samuel Eugene Lawrence

SENIOR HONORS

Henry Harrington Broadfoot
 James Hugh Williamson
 Harry A. Wansker
 Abraham Samuel Lahn
 Samuel Lyman Rodman

SOPHOMORE HONORS

Daniel Olney Cargill
 Wayland McColley Burgess
 Vernon James Wilbourn
 Edward Leroy Carpenter

JUNIOR HONORS

Joseph Wansker
 Lester Earl Wells
 Hannah Amelia Stillman
 Dorothy Estelle Haskell
 James Joseph Devine
 Ruth Westlake Chandler
 Charles Edward Mason
 Nelson Everett Blake
 Melvin Hazard Brightman
 Harold Kenneth Wilder
 George Andrew Fearn

FRESHMAN HONORS

Samuel Allen McKee
 Walter Bernard Paul Koehler
 Whitney Eastman Greene
 Abraham Thomas
 Esther Wilhelmina Peterson
 Harold Pearson Gibson
 Waldo Daniel Emery
 Herbert Elmer Spink
 Walter Alexander Kenyon
 Frederic Robinson Briggs

Degrees Conferred in 1917**Bachelor of Science**

Arnold Willard Ames
 John Gordon Anderson
 Harold Congdon Anthony
 Henry Arthur Bartels
 Henry Harrington Broadfoot
 Elizabeth Hope Browne
 James Andrew Clark
 Harry Cohen
 Leslie Lincoln Dunham
 Wilfred Ross Easterbrooks
 Robert Allen Ebbs
 William Augustus Flynn
 Franklin Perry Goddard
 Charles Edward Harry
 Clinton Dexter Hawkins
 Edwin Douglas Hill
 Charles Varnum Johnson
 Donald John Kendall
 Abraham Samuel Lahn

Samuel Eugene Lawrence
 Albert Alphonse LeBoeuf
 Albert Edward McIntosh
 James Francis Pyne
 Ernest Elmer Redfern
 David Adam Redford
 Grace Lillian Rieckel
 Samuel Lyman Rodman
 Kenneth Matteson Slocum
 Harold Buren Smith
 Raymond Douglas Taylor
 Joseph Gardiner Tew
 Aubrey Harvey Thayer
 Theose Elwin Tillinghast
 Harry Abe Wansker
 Ashbel Russell Welles
 James Hugh Williamson
 Herbert Andrew Wisbey

Master of Science

Solomon Fine

George Edward Spencer

Master of Agriculture

Horace W. Tinkham

STUDENTS

Graduates

Caldwell, Dorothy Walcott (M. S., R. I. S. C., 1914).....	Kingston
Heath, Bertha May (B. S., R. I. S. C., 1910).....	Kingston

Seniors

Barton, Henry, Jr., Civ. Eng.....	Bristol
Blake, Nelson Everett, Chem. Eng.....	Wallingford, Conn.
Cameron, Lorne Atwood, Agr.....	Mattapan, Mass.
Chandler, Ruth Westlake, Home Econ.....	Providence
Coyne, Sarah Elizabeth, Home Econ.....	Providence
Dawson, William, Civ. Eng.....	Methuen, Mass.
Devine, James Joseph, Mech. Eng.....	Bridgewater, Mass.
Edmiston, Irma Rathbun, Home Econ.....	East Greenwich
Gillis, William Ellis, Appl. Sci.....	East Providence
Groves, Lester Davis, Agr.....	Hope
Haggarty, Charles William, Elec. Eng.....	Allenton
Haskell, Dorothy Estelle, Home Econ.....	West Barrington
Keegan, Leslie Arthur, Agr.....	Providence
Kinney, Esther Lee, Home Econ.....	Kingston
Lermond, Charles Elwyn, Mech. Eng.....	East Providence
Lynch, Daniel Joseph, Jr., Mech. Eng.....	Brockton, Mass.
Meyer, Arthur Henry Frederick, Chem. Eng.....	Providence
Spargo, Raymond Alexander, Agr.....	Westerly
Stillman, Hannah Amelia, Home Econ.....	Westerly
Stone, Albert, Appl. Sci.....	Meshanticut
Strand, Henry Richard, Agr.....	Brockton, Mass.
Torgan, Milton, Appl. Sci.....	East Providence
Walsh, James Russell, Mech. Eng.....	Fall River, Mass.
Wansker, Joseph, Chem. Eng.....	South Boston, Mass.
Wells, Lester Earl, Elec. Eng.....	Norwood

Juniors

Baker, Sprague Sanborn, Appl. Sci.....	Brockton, Mass.
Benish, Theodore Albert, Agr.....	Perth Amboy, N. J.
Brierley, Ralph Ernest, Chem. Eng.....	Newport
Burgess, Wayland McColley, Chem. Eng.....	North Scituate
Cargill, Daniel Olney, Civ. Eng.....	Valley Falls
Carpenter, Edward Leroy, Mech. Eng.....	Peace Dale
Carpenter, Philip Martin, Elec. Eng.....	Peace Dale
Clary, Stanley Woodbert, Agr.....	Pawtucket

Cohen, Samuel Harry, Elec. Eng.....	Conimicut
Creedon, Michael Vincent, Mech. Eng.....	Brockton, Mass.
Damon, Elizabeth Elmore, Appl. Sci.....	Kingston
Dowling, John Joseph, Chem. Eng.....	Providence
Eastwood, Edmund Cecil, Agr.....	Providence
Gamble, Edward Henry, Chem. Eng.....	Pawtuxet
Gardner, Anna Peckham, Home Econ.....	Saunderstown
Gardner, Harold Adino, Appl. Sci.....	Phenix
Goldstein, Irving, Chem. Eng.....	Providence
Harrington, Herman Battey, Agr.....	Providence
Hildreth, Charles Tew, Elec. Eng.....	Newport
Holley, Arthur Tucker, Agr.....	Wakefield
Hudson, Albert Sprague, Agr.....	Harris
Irons, Merrill Althea, Home Econ.....	North Scituate
Kinney, Helen Wells, Home Econ.....	Kingston
Knott, James Edward, Jr., Agr.....	Kingston
Kohlberg, Rudolph Horton, Agr.....	Providence
Marx, Howard Earle, Civ. Eng.....	Providence
Miller, Helen Frances, Appl. Sci.....	Narragansett Pier
Mitchell, James Albert, Elec. Eng.....	Oakland
Murphy, Maurice Vincent, Mech. Eng.....	Brockton, Mass.
Nichols, Ruhamah Robinson, Home Econ.....	Slocum
Northup, Kenneth Leroy, Elec. Eng.....	Kingston
O'Brien, Charles Francis, Mech. Eng.....	Shelburne Falls, Mass.
Peterson, Thurston Waldemar, Mech. Eng.....	Pawtucket
Reid, Earl Winslow, Mech. Eng.....	Brockton, Mass.
Rioux, Raymond Joseph, Elec. Eng.....	Edgewood
Seabury, Douglas Beveridge, Agr.....	Providence
Shippee, Florence Louise, Home Econ.....	Arlington
Smith, Priscilla DaCosta, Home Econ.....	Woonsocket
Spencer, Leander Burnside, Jr., Chem. Eng.....	East Greenwich
Sullivan, Charles McManus, Chem. Eng.....	Providence
Thornton, Albert Angell, Agr.....	Johnston
Tweedell, William Theodore, Agr.....	Pawtuxet
Walker, Frederick Earle, Mech. Eng.....	Arlington
Waugh, George Lincoln, Agr.....	Lonsdale
Wilbourn, Vernon James, Appl. Sci.....	Providence
Young, Margera Lenore, Home Econ.....	Westerly

Sophomores

Arnold, Walter Bennett, Agr.....	Saylesville
Ashcroft, Isabella, Home Econ.....	Pawtucket
Baker, Louise, Home Econ.....	Pawtucket
Bartlemo, Thomas, Appl. Sci.....	Hughesdale
Beasley, Dorald Dewey, Chem. Eng.....	Woonsocket
Bemis, George Harold, Chem. Eng.....	Shelburne Falls, Mass.

Biggs, Francis Lincoln, Mech. Eng.....	Providence
Bogosian, Harry Der, Civ. Eng.....	Providence
Briggs, Frederic Robinson, Agr.....	Hartford, Conn.
Campbell, Emily Catherine, Home Econ.....	Newport
Carnie, William Brown, Elec. Eng.....	Woonsocket
Cella, Leo Lawrence, Appl. Sci.....	Westerly
Clarke, Horace Wilbur, Civ. Eng.....	Providence
Copeland, Everett Adams, Elec. Eng.....	Edgewood
Crandall, Harry Franklin, Appl. Sci.....	Westerly
Damon, Louise Elmore, Home Econ.....	Kingston
Day, Earl Sumner, Chem. Eng.....	Providence
Edwards, Mildred Elizabeth, Home Econ.....	Kingston
Emery, Waldo Daniel, Mech. Eng.....	Woonsocket
Fenwick, Harold Matthew, Mech. Eng.....	North Easton, Mass.
Gardiner, Milton Warren, Civ. Eng.....	Saylesville
Gray, Russell Perry, Agr.....	Attleboro, Mass.
Greene, Whitney Eastman, Mech. Eng.....	Kingston
Haslam, Arthur Edmond, Agr.....	Providence
Hawes, Howard Haldane, Agr.....	Riverside
Hillard, Paul Noyes, Mech. Eng.....	Westerly
Hoffman, Elsa, Home Econ.....	Pawtucket
Holley, Charles Potter, Mech. Eng.....	Kingston
Holmes, John Foster, Agr.....	Needham, Mass.
Horton, Harold Smith, Agr.....	Attleboro, Mass.
Kaufman, Max, Appl. Sci.....	Providence
Kwasha, Leonard James, Chem. Eng.....	Providence
Maliff, Thomas, Agr.....	North Easton, Mass.
Malloy, James Lawrence, Chem. Eng.....	Woonsocket
Maloney, John Joseph, Elec. Eng.....	Pawtucket
McKee, Samuel Allen, Mech. Eng.....	Woonsocket
McKenzie, Daniel Bartlett, Appl. Sci.....	Essex, Mass.
Messerlian, Leon John, Mech. Eng.....	Providence
Murray, Ruth Goodwin, Home Econ.....	Stamford, Conn.
Newman, Hyman Leo, Chem. Eng.....	Providence
Nordquist, Clarence Edward, Mech. Eng.....	Elmwood
O'Connell, Howard Joseph, Agr.....	Providence
Palmer, Earl Geer, Elec. Eng.....	Hope Valley
Papalia, Philip Dewey, Appl. Sci.....	Westerly
Peterson, Esther Wilhelmina, Home Econ.....	Westerly
Pihl, Roland Taylor, Mech. Eng.....	Lynn, Mass.
Records, Lawrence Austin, Agr.....	Brockton, Mass.
Reilly, Eugene Anthony, Appl. Sci.....	Blackstone, Mass.
Robitaille, Eugene Francis, Mech. Eng.....	Providence
Rossi, Albert Michael, Chem. Eng.....	Providence
Sisson, Albert Peckham, Agr.....	Little Compton
Smith, Howard Bucklin, Appl. Sci.....	Providence
Spink, Herbert Elmer, Civil Eng.....	Davisville

Stillman, Elizabeth, Home Econ.....	Westerly
Sweetland, Sherburne Pride, Elec. Eng.....	Rumford
Taft, Richard Christie, Mech. Eng.....	Brockton, Mass.
Thackray, Elsie Law, Home Econ.....	Pawtucket
Thomas, Abraham, Agr.....	Providence
Turkel, Sidney, Chem. Eng.....	Providence
Veneziale, Anthony, Civ. Eng.....	Providence
Whitford, Ada Elizabeth, Home Econ.....	Wakefield
Whitford, Amy Ann, Home Econ.....	Wakefield
Whyte, Arthur John, Agr.....	North Easton, Mass.
Wiley, John Douglass, Agr.....	Pawtucket
Woodbury, Kenneth James, Agr.....	Providence

Freshmen

Anderson, Flora McPherson, Appl. Sci.....	Newport
Angell, William Emerson, Eng.....	Providence
Baacke, Henry Frederick, Eng.....	Arlington
Baker, Harold James Hall, Agr.....	Westerly
Battel, Leo Joseph, Eng.....	Woonsocket
Bloxham, Harold Carlton, Eng.....	Pawtucket
Boss, Lewis Judson, Eng.....	North Scituate
Brightman, Francis Pierce, Eng.....	Hopkinton
Brown, Lawrence Linwood, Eng.....	Carolina
Brownell, Charles DeWolf, Eng.....	Bristol
Burke, John Raymond, Appl. Sci.....	Westerly
Campbell, Mary Catherine, Home Econ.....	Providence
Carr, Rose Mary, Home Econ.....	Providence
Collins, Louis Hamill, Appl. Sci.....	Westerly
Connolly, Bernard Ambrose, Eng.....	Brockton, Mass.
Cook, Walter Clayton, Eng.....	Harwich, Mass.
Cruise, Lillian Marie, Home Econ.....	Pawtucket
D'Atri, Vincent Anthony, Eng.....	Providence
Davis, Edwin Baker, Appl. Sci.....	Edgewood
Davis, Elizabeth Edith, Home Econ.....	Providence
Davis, George Hazen, Eng.....	Fall River, Mass.
Davis, Hazel Narcissa, Appl. Sci.....	Old Mystic, Conn.
Deery, Edwin Marshall, Agr.....	Boston, Mass.
DeSimone, Royal, Agr.....	Providence
Eldridge, Alice May, Home Econ.....	Greenville
Famiglietti, Albert Michael, Eng.....	Providence
Fanning, William Long, Eng.....	Providence
Fisher, Lloyd Herbert, Eng.....	Providence
Flynn, Frederick John, Eng.....	Woonsocket
Ford, Willard Harding, Eng.....	Avon, Mass.
Furlong, James John, Appl. Sci.....	Providence
Galvin, James Martin, Appl. Sci.....	East Greenwich

Gates, William Murray, Eng.....	Narragansett Pier
Gerstle, Gladys Darling, Home Econ.....	Woonsocket
Gladding, Samuel Wesley, Eng.....	Bristol
Gledhill, Lloyd Harold, Appl. Sci.....	Wakefield
Greene, Edwin Matteson, Eng.....	Hope Valley
Greene, Marjorie Rosalind, Home Econ.....	Wakefield
Hart, Charles Gerald, Eng.....	Roxbury, Mass.
Harvey, John Denison Lange, Eng.....	Watch Hill
Holleran, Joseph Edward, Eng.....	Roslindale, Mass.
Holley, Albert Henry, Eng.....	Providence
Hughes, Bertha Isabelle, Appl. Sci.....	Providence
Kane, Leo Vincent, Appl. Sci.....	Rockland, Mass.
Kenyon, Howard Vernon, Eng.....	Lafayette
Kohlberg, Esther Lucile, Home Econ.....	Providence
LaPerche, Raymond Charles, Eng.....	Providence
Levy, Samuel Joseph, Eng.....	Providence
Libby, Maxon Reed, Agr.....	Providence
Martelli, Pasqualino, Eng.....	Essex, Conn.
McCabe, James Patrick, Appl. Sci.....	Glendale
McDonald, Ian Philip, Appl. Sci.....	Newport
Mitchell, Achilles Damon, Eng.....	Newport
Mitchell, Anthony Nicholas, Appl. Sci.....	Newport
Mooney, Grace Ethel, Home Econ.....	Providence
Moore, Walter Webster, Agr.....	Providence
Moran, John Benedict, Appl. Sci.....	Woonsocket
Murphy, Joseph Stephen, Appl. Sci.....	Sandwich, Mass.
Nathanson, Charles, Appl. Sci.....	Central Falls
Nichols, Chester Raymond, Appl. Sci.....	Woonsocket
Olson, George Herbert, Appl. Sci.....	Providence
O'Neill, Joseph Edward, Eng.....	Brockton, Mass.
Paton, James, Appl. Sci.....	Saylesville
Peckham, Charles Daniel, Jr., Eng.....	Bradford
Peckham, Joseph Wallace, Eng.....	Aquidneck
Perry, Charles Edward, Eng.....	Wrentham, Mass.
Pezzullo, Rocco, Appl. Sci.....	Providence
Regan, Thomas Patrick, Eng.....	Providence
Reid, David, Jr., Eng.....	Peace Dale
Ricci, Ernest, Agr.....	Providence
Sekowski, John Joseph, Appl. Sci.....	North Attleboro, Mass.
Sherman, Isaac Thornton, Agr.....	Newport
Smales, Holbert Thomas, Eng.....	Providence
Smith, Isaac Willard, Eng.....	West Barrington
Smith, Waldo Albert, Agr.....	Slocum
Stailing, Clifford Dow, Eng.....	Ivoryton, Conn.
Steeves, Elmer Ernest, Appl. Sci.....	Essex, Mass.
Stillman, Louis, Eng.....	Providence
Suddard, Arthur Willis, Agr.....	North Scituate

Sullivan, Sarah Manila, Home Econ.....	Hamilton
Sweet, Harold Ellsworth, Eng.....	Narragansett Pier
Tefft, Lucy Catherine, Appl. Sci.....	New Bedford, Mass.
Thompson, Alexander Raymond, Eng.....	Westerly
Tollefson, Theodore Bennett, Eng.....	Newport
Tordoff, Mark, Jr., Eng.....	Providence
Torgan, Nathan, Jr., Eng.....	Providence
Tuzio, Arthur Joseph, Eng.....	Providence
Wade, Senior, Agr.....	Woonsocket
Wales, Charles Howard, Eng.....	Haverhill, Mass.
Watson, Beatrice Janet, Home Econ.....	Wakefield
Weis, Marian Lewis, Appl. Sci.....	Providence
Wheeler, Katherine Harriet, Home Econ.....	Providence
Whitaker, Harold Earl, Agr.....	Providence
Williamson, William Joseph, Eng.....	Pawtucket
Wilmot, William Earl, Eng.....	Wickford
Wittmann, Victor Simon, Agr.....	Providence
Young, Jessie Steele, Home Econ.....	Providence
Zerbarini, Angelo Joseph, Eng.....	Westerly

Two-Year Course in Agriculture

Boyce, Frank Alexander	Lonsdale
Foster, Ralph Sargent.....	North Andover, Mass.
Francis, Albert Henry	Woonsocket
Greene, Harold Allen.....	East Greenwich
Huntington, Valentine Erskine	Newport
Kerigan, Joseph Matthew	Providence
Murdock, Ernest Lawrence	Norwood
Panciera, George	Bradford

Irregular

Briggs, Esther Beale, Home Econ.....	Kingston
Damon, Albert Willard, Agr.....	Kingston
Humphrey, Karl, Agr.....	Providence
Johnson, Francis Jones, Eng.....	Barrington Center
Kern, Eugenie Marie, Home Econ.....	Providence
Sykes, Mrs. Hattie L., Home Econ.....	Pawtucket
Wicks, Elinor Gertrude, Home Econ.....	Pawtucket

Summary

Graduate	2
Senior	25
Junior	46
Sophomore	65
Freshmen	98
Irregulars	7
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	243
Two-Year	8
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Total	251

Graduates

1894

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD.....Agr. M. Agr. R. I. State College, 1916. Kingston.		Professor of Agronomy, R. I. S. C.
AMMONDS, GEORGE CLARENCE.....Mech. 54 Eliot St., Boston, Mass.		Railroad Postal Clerk, on N. Y., N. H. & H. R. R.
ARNOLD, CHAPIN TRAFFORD.....Agr. Box 57, Providence.		Electrical Contractor, Office 26 Custom House St., Providence.
BURLINGAME, GEO. WASHINGTON...Agr. R. F. D. No. 2, Box 56, North Scituate.		Farmer and Teacher.
CLARK, HELEN MAY (MRS. WM. F. B. LEAVITT), B. L. Smith Col- lege, 1899. Essex Fells, New Jersey.		At home.
KNOWLES, JOHN FRANKLIN.....Mech. Narragansett Pier.		With The Bristow Bros. & Knowles Corporation.
*MADISON, WARREN BROWN.....Agr.		
MATTHEWSON, ERNEST HOXIE.....Mech. Ph. B., Brown University, 1896. Reidsville, North Carolina.		Crop Technologist in Tobacco, U. S. Department of Agricul- ture.
PECKHAM, REUBEN WALLACE.....Agr. 556 White St., Springfield, Mass.		Y. M. C. A. Secretary, 41 Rue de Provence, Paris, France.
RATHBUN, WILLIAM SHERMAN.....Agr. 38 Forest St., Willimansett, Mass.		Proof-Reader, Eureka Blank Book Co., Holyoke, Mass.
RODMAN, GEORGE ALBERT.....Mech. New Haven, Conn.		General Supervisor, Bridges and Buildings, Union Station, N. Y., N. H. & H. R. R. Co.
SARGENT, CHARLES LAWRENCE.....Agr. Ph. D., University of Pennsylvania, 1900. 54 Shepard Ave., Newark, New Jersey.		Superintendent, Color Department, Murphy Varnish Co.
SLOCUM, SAMUEL WATSON.....Agr. 60 Summer St., Westerly.		Instructor of Woodwork, West- erly Schools.
SPEARS, JOHN BARDEN.....Agr. Foster Centre.		Rural Letter Carrier.

It is earnestly desired that graduates inform the college office of any permanent change of address.

* Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SWEET, STEPHEN ADELBERT.....	Agr.	Farmer.
Slocums.		
TUCKER, GEORGE MASON.....	Agr.	Farm Manager, United Coal Cor- poration, Pittsburg, Pa.
Ph. D. Göttingen, 1899.		
Wendel, Pa.		
WILBER, ROBERT ARTHUR.....	Mech.	Carriage-maker and blacksmith.
East Greenwich.		

1895

*ALBRO LESTER FRANKLIN.....	Agr.	
BURDICK, HOWLAND.....	Agr.	Assistant Professor of Dairying, R. I. S. C.
Kingston.		
CLARKE, CHARLES SHERMAN.....	Mech.	Marine Engineer.
22 Wood St., Bristol.		
ELDRED, MABEL DEWITT.....		Instructor in Drawing, R. I. S. C.
Kingston.		
HAMMOND, JOHN EDWARD.....	Agr.	Farmer.
Jamestown.		
OATLEY, LINCOLN NATHAN.....	Mech.	Contractor and builder; Coal Dealer.
Wakefield.		
SCOTT, ARTHUR CURTIS.....	Mech.	Consulting Engineer.
Ph. D., Univ. of Wisconsin, 1902.		
4114 Cedar Springs Ave., Dallas, Texas.		
TEFFT, JESSE COTTRELL.....	Mech.	Boatswain, U. S. Naval Reserve, Mine Sweeper Pocomoke No. 265.
Jamestown.		
WINSOR, BYRON EDGAR.....	Mech.	Poultryman.
Coventry.		

1896

BROWN, MAY (MRS. CHARLES A. WHITE).	At home.
Narragansett Pier.	
GREENMAN, ADELAIDE MARIA (MRS. R. WALLACE PECKHAM).....	At home.
Graduate, School of Expression, 1901.	
556 White St., Springfield, Mass.	
KENYON, ALBERT LEWIS.....	With U. S. Finishing Co.
240 Camp St., Providence.	
MOORE, NATHAN LEWIS CASS.....	Fruit-grower, citrus culture.
Harrington Park, New Jersey.	
TABOR, EDGAR FRANCIS.....	Foreman Printer, The South- bridge Printing Co.
39 Everett St., Southbridge, Mass.	
*WILLIAMS, JAMES EMERSON.....	Agr.

* Deceased.

1897

CARMICHAEL, WELCOME SANDS.....Sci.	Commercial Grower of Fruits and Flowers.
Shannock.	
CASE, HERBERT EDWARDS BROWN..Mech.	Secretary, Amer. Board of Commissioners for Foreign Missions.
Ph. B., Brown University, 1900.	
Graduate, Hartford Theological Seminary, 1904.	
14 Beacon St., Boston, Mass.	
GRINNELL, ARCHIE FRANKLIN.....Mech.	Assistant to Chief Engineer, Marlin-Rockwell Corp.
114 Asylum St., Norwich, Conn.	
HANSON, GERTRUDE MAIE.....Sci.	Teacher.
Westerly.	
HOXSIE, BESSIE BAILEY	
(MRS. E. F. RUECKERT).....Sci.	At home.
98 Melrose St., Providence.	
KENYON, ALBERT PRENTICE.....Mech.	Bookkeeper, Maxson & Co., Westerly.
23 Courtland St., Westerly.	
KENYON, CHARLES FRANKLIN.....Mech.	Engineer.
Shannock.	
LARKIN, JESSIE LOUISE.....Sci.	Genealogist.
98 Beach St., Westerly.	
*MARSLAND, LOUIS HERBERT.....Mech.	
TEFFT, ELIZA ALICE.....Sci.	Teacher.
Exeter Hill.	
THOMAS, IRVING .....Mech.	Farmer and Mill Operative.
Lafayette.	

1898

ARNOLD, SARAH ESTELLE	
(MRS. R. O. BROOKS).....Sci.	At home.
975 East 18th St., Brooklyn, N. Y.	
BARBER, GEORGE WASHINGTON.....Agr.	Rancher.
Glendora, Cal.	
CARGILL, EDNA MARIA	
(MRS. LESTER H. BROWN).....Sci.	At home.
R. F. D. No. 2, Box 96, Valley Falls.	
CASE, JOHN PETER.....Agr.	Manager Western Office, Brown Hoisting Machinery Company.
251 Monadnock Bldg., San Francisco, Cal.	
CLARKE, WILLIAM CASE.....Sci.	General Manager, Narragansett Pier Elec. Light and Power Co.
114 Lorimer Ave., Providence.	
CONGDON, HENRY AUGUSTUS.....Mech.	Farmer.
Kingston.	

NAME AND ADDRESS.

COURSE.

OCCUPATION.

FLAGG, MARTHA REBECCA.....	Sci.	At home.
Abbott Run.		
HARLEY, WILLIAM FERGUSON.....	Agr.	Buyer, with Messrs. Callender, McAuslan & Troup, Providence.
23 Summit Ave., Providence.		
TURNER, HARRIETTE FLORENCE (MRS. GEO. M. TUCKER).....	Sci.	At home.
Graduate, Drexel Institute, 1900. Wendel, Pa.		
WILSON, GRACE ELLEN (MRS. W. F. HARLEY).....	Sci.	At home.
23 Summit Ave., Providence.		

1899

BOSWORTH, ALFRED WILLSON.....	Sci.	Biological Chemist, Boston Float- ing Hospital.
A. M., Harvard University, 1913. 418 Brook Road, Milton, Mass.		
BROOKS, RALPH ORDWAY.....	Sci.	Consulting Chemist, Bacteriolo- gist, Microscopist, Food-Inspec- tion Expert, 191 Franklin St., New York City.
975 East 18th St., Brooklyn, N. Y.		
GEORGE, LILLIAN MABELLE.....	Sci.	Cataloger, Oregon Agricultural College Library.
A. B., Univ. Illinois, 1904. Graduate, N. Y. State Library School, 1910. 135 N. 26th St., Corvallis, Ore.		
HARVEY, MILDRED WAYNE (MRS. WM. H. BLISS).....	Sci.	At home.
390 Wadsworth Ave., New York City.		
KENYON, BLYDON ELLERY.....	Agr.	Asst. Supt. of Construction, Stone & Webster Eng. Corporation.
Dover, New Jersey.		
KNOWLES, CARROLL	Mech.	Chief Tool Designer, Brown & Sharpe Mfg. Co.
77 Chiswick Road, Edgewood.		
KNOWLES, HARRY	Sci.	Advertising, Atlas Portland Ce- ment Co.
Ph. B., Brown University, 1906. 113 Ft. Greene Place, Brooklyn, N. Y.		
LADD, MERRILL AUGUSTUS.....	Mech.	Secretary and Treasurer, Florida Electric Supply Co.
Jacksonville, Fla.		
MORRISON, CLIFFORD BREWSTER.....	Sci.	Assistant Chemist, Conn. State Experiment Station.
New Haven, Conn.		
OWEN, WILLIAM FRAZIER.....	Mech.	Engineering Department, General Electric Co.
Schenectady, N. Y.		
PAYNE, EBENEZER	Sci.	Orange Grower.
M. D., Univ. Michigan, 1904. Glendora, Cal.		
PHILLIPS, WALTER CLARKE.....	Mech.	Instructor in English, Brown University.
Ph. B., Brown University, 1902. A. M., Brown University, 1903. Providence.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
REYNOLDS, ROBERT SPINK..... Room 314, Gen. Office Bldg., New Haven, Conn.	Mech.	Assistant Engineer, Bridge Dept., N. Y., N. H. & H. R. R. Co.
RICE, MINNIE ELIZABETH (MRS. ROBERT J. SHERMAN)..... Exeter Hill.	Sci.	At home.
SHERMAN, ABBIE GERTRUDE (MRS. BENJAMIN BARTON)..... 56 Pavilion Ave., Providence.	Sci.	At home.
*SHERMAN, GEORGE ALBERT.....	Mech.	
THOMPSON, SALLY RODMAN (MRS. LEWIS BALCH, JR.)..... Wakefield.	Sci.	At home.

1900

BRIGHTMAN, HENRY MAXSON..... 32 Mountain Ave., Edgewater, N. J.	Mech.	Drying Expert, with B. F. Sturtevant Co., Room 1706, 52 Vanderbilt Ave., New York City.
CROSS, CHARLES CLARK..... 316 Schantz Ave., Dayton, Ohio.	Mech.	Vice-President and General Manager, Troy Mfg. Co., Troy, Ohio.
ELDRED, JOHN RALEIGH..... Kingston.	Mech.	Instructor in Mechanical Engineering, R. I. S. C.
FISON, GERTRUDE SARAH (MRS. JOHN W. ROOT)..... 139 Fresh Pond Parkway, Cambridge, Mass.	Sci.	At home.
FRY, JOHN JOSEPH..... Greenwich, Conn.	Sci.	Supervising Principal Byram School and Hamilton Ave. School.
GODDARD, EDITH (MRS. LAWRENCE B. REED)..... 20 North St., Plymouth, Mass.	Sci.	At home.
KENYON, AMOS LANGWORTHY..... Wood River Junction.	Agr.	Dairyman.
MUNRO, ARTHUR EARLE..... Ph. B., Brown University, 1902. 41 George St., Providence.	Sci.	Attorney-at-law, 49 Westminster St.
SOULE, RALPH NELSON..... Racine, Wisconsin.	Sci.	Mgr., Gen. Service Dept., Mitchell Motor Co., 842 Main St., Racine.
STEERE, ANTHONY ENOCH..... Room 50, Triangle Bldg., Rochester, N. Y.	Mech.	Resident Civil Engineer, New York State Canals.
STILLMAN, LENORA ESTELLE..... 1046 Greene Ave., Brooklyn, N. Y.	Sci.	Teacher.

NAME AND ADDRESS.

COURSE.

OCCUPATION.

TUCKER, BERTHA DOUGLASS.....	Sci.	Teacher, Boston Trade School. Franklin Square House, Boston, Mass.
WHEELER, CHARLES NOYES.....	Sci.	Clerk, Wm. H. Haskell Manufac- turing Co. 21 Cedar St., Pawtucket.
WILSON, JOSEPH ROBERT.....	Mech.	Surveyor. 184 Grace St., Auburn.

1901

BRAYTON, CHARLES ANDREW.....	Agr.	Farmer. Hope, R. F. D.
BRIGGS, NELLIE ALBERTINE.....	Sci.	Stenographer, R. I. Hospital Trust Co. Providence.
BURGESS, CHARLES STUART.....	Mech.	Draftsman, Brown & Sharpe Mfg. Co. 264 Sayles St., Providence.
CLARNER, LOUIS GEORGE KARL, JR....	Sci.	Insurance Engineer, N. E. Bureau of Underwriters. 19 Pearl St., Concord, N. H.
DAWLEY, EDNA ETHEL (MRS. GEORGE W. WHITFORD).....	Sci.	At home. West Kingston, R. F. D., Box 80.
DENICO, ARTHUR ALBERTUS.....	Sci.	Traffic Engineer, with American Telephone and Telegraph Co. Ph. B., Brown University, 1904. 195 Broadway, New York City.
*JAMES, RUTH HORTENSE (MRS. HERBERT E. ROUSE).....	Sci.	
SHERMAN, ANNA BROWN (MRS. JOSEPH R. WILSON).....	Sci.	At home. 184 Grace St., Auburn.
SHERMAN, ELIZABETH AGNES.....	Sci.	Secretary to Research Chemist, Arthur D. Little, Inc., Boston. 424 Mass. Ave., Boston, Mass.
SMITH, HOWARD DEXTER.....	Sci.	Instructor in Chemistry, Lowell Textile School. A. M., Brown University, 1904. Ph. D., Tufts College, 1906. 30 Hawthorne St., Lowell, Mass.
STEERE, ROWENA HOXIE.....	Sci.	Stenographer. 102 Sassafras St., Providence.
*WILBY, JOHN	Sci.	

1902

CLARKE, LATHAM	Chem.	Director, Instituto de Quimica Industrial. A. M., Brown University, 1903. Ph. D., Harvard University, 1905. Montevideo, Uruguay.
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NAME AND ADDRESS.	COURSE.	OCCUPATION.
FERRY, OLIVER NEEDHAM..... 111 Coniston Ave., Waterbury, Conn.	Mech.	Superintendent, Waterbury Tool Co.
MAXSON, RALPH NELSON..... Ph. D., Yale University, 1905. 366 Transylvania Park, Lexington, Ky.	Chem.	Professor Inorganic Chemistry, State University.
PITKIN, ROBERT WILLIAM..... Rockville, Conn., R. F. D. No. 1.	Mech.	Farmer.

1903

BARBER, KATE GRACE (MRS. A. L. WINTON)..... Ph. D., Yale University, 1906. 1322 Vermont Ave., Washington, D. C.	Gen. Sci.	Investigations in Vegetable His- tology.
CONANT, WALTER AIKEN..... Temple, N. H.	Agr.	Dairying, The Conant and Clem- ent Farms, Hillsboro County.
GODDARD, WARREN, JR..... Graduate, New Church Theological School, 1907. 129 College St., Urbana, Ohio.	Mech.	Instructor in Physics, Chemistry and Theology, Urbana Univ. Schools.
KEEFER, EDITH CECILIA..... 260 West 57th St., New York City.	Biol.	Teacher of Mathematics, Miss Spence's School.
KENT, RAYMOND WARREN..... A. M., Harvard University. 1237 Ridge Road, Canton, Ohio.	Chem.	Chemist, The Knight Tire & Rub- ber Co.
TEFFT, ERNEST ALLEN..... 85 Larch St., Providence.	El. Eng.	Electrical Contractor, 87 West- minster St.

1904

BALLOU, WILLARD ALGER..... B. S., Columbia University, 1913. M. A., Columbia University, 1915. 335 Lafayette Ave., Brooklyn, N. Y.	Biol.	Instructor in Mathematics, Pratt Institute.
QUINN, MARY LOUISE..... 285 Locust St., Fall River, Mass.	Biol.	Teacher of Science, Technical High School.
RODMAN, WALTER SHELDON.... M. S., R. I. C. A. & M. A., 1907. M. S., Mass. Inst. Tech., 1909. Box 222, University, Va.	El. Eng.	Professor of Electrical Engineer- ing, University of Virginia.

1905

CHAMPLIN, SARAH ELIZABETH (MRS. HAROLD L. FRIEND).... 306 Smith St., Edgewood.	Gen. Sci.	At home.
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NAME AND ADDRESS.	COURSE.	OCCUPATION.
DOW, VICTOR WELLS..... Berwyn, Penna.	High. Eng.	Assistant Sales Mgr., American Bronze Co.
GILMAN, JEAN Hampton, Va.	High. Eng.	Assistant to Director of Trade School, Hampton Institute.
HARRALL, NELLIE ARMSTRONG (MRS. B. H. ARNOLD)..... Graduate, Sargent School of Physical Education, 1909. 555 West 10th St., Erie, Pa.	Gen. Sci.	At home.

1906

ARNOLD, BENJAMIN HOWARD.... 555 West 10th St., Erie, Pa.	El. Eng.	Supervisor of Employment, Wel- fare and Hospital Work, Erie Works, General Electric Co.
*BERRY, WALLACE NOYES..... ELKINS, MARION GRAHAM..... Ph. D., Yale University, 1912. Oxford, Ohio.	El. Eng. Gen. Sci.	Dean of Botany, Oxford College.
HARDING, LEE LAPLACE..... 11 Parsons St., West Newton, Mass.	High. Eng.	Manager, Farm Power Dept., Ames Plow Co., Boston, Mass.
KEYES, FREDERICK GEORGE..... Sc. M., Brown University, 1907. Ph. D., Brown University, 1909. 60 Fenway, Boston, Mass.	Chem.	Captain, Chem. Service, U. S. N. A., American Expeditionary Force.
NICHOLS, HOWARD MARTIN..... 64 Clifford St., Readville, Mass.	El. Eng.	Engineer, B. F. Sturtevant Co.
SISSON, CORA EDNA (MRS. BENJAMIN D. BUSH).. M. S., Brown University, 1910. Lakewood, N. J.	Gen. Sci.	At home.
WILKINSON, ALBERT EDMUND..... M. Agr., R. I. State College, 1916. May's Landing, N. J.	Agr.	Poultry Extension Service.

1907

BARBER, ARTHUR HOUGHTON.. East Greenwich.	Mech. Eng.	Inspector for Associated Factory Mutual Fire Insurance Cos., Boston, Mass.
COGGINS, CALVIN LESTER..... Kingston.	El. Eng.	Assistant Professor of Physics and Elec. Eng., R. I. S. C.
FERRY, JAY RUSSELL..... 677 Rutherford Ave., Trenton, N. J.	High. Eng.	Captain, 105th Aero Squadron, Signal Corps, American Expedi- tionary Force.

KELLOGG, DAVID RAYMOND.....Chem. Ph. D., Ohio State University, 1912. Albemarle Bldg., 24th and Broad- way, New York.	Captain, Ordnance R. C., Inspec- tion Division.
KENDRICK, WINFIELD SMITH....El. Eng. 115 Waverly Place, Schenectady, N. Y.	In charge Sales Lab. Products, General Electric Co.
LAMOND, JOHN KENYON.....El. Eng. M. A., Yale University, 1908. Ph. D., Yale University, 1910. Broadway, Gettysburg, Pa.	Professor of Mathematics, Penn- sylvania College.
LEWIS, HARRY REYNOLDS.....Agr. M. Agr. R. I. S. C., 1916. 1 Clifton Ave., New Brunswick, N. J.	Professor, Dairying and Poultry Husbandry, Rutgers College.
*MACOMBER, MINER SANFORD.....Chem.	
TUCKER, ETHEL ALDRICH (MRS. LITTLETON C. HAYDEN) Gen. Sci. 28 Sadler Ave., Pittsfield, Mass.	At home.

1908

DREW, JOSEPH DRAKE.....Chem. 2505 17th Ave., Ensley, Alabama.	Chemist, Tenn. Coal, Iron & R. R. Co.
FIELD, CLESSON HERBERT.....Civ. Eng. C. E., Lehigh University, 1909. 272 Washington Highway, Snyder, N. Y.	Contracting Engineer, Ferguson Steel & Iron Co., Buffalo, N. Y.
FISKE, HERBERT ANDREW.....El. Eng. 1800 Acushnet Ave., New Bedford, Mass.	Proprietor, H. A. Fiske Garage.
GARDINER, ROBERT FRANKLIN.....Chem. M. S., George Washington University, 1914. Box 344, Clarendon, Va.	Asst. Chemist, Bureau of Soils, U. S. Dept. of Agriculture.
GORY, EDWARD ALLEN.....El. Eng. 72 Canterbury St., Dorchester, Mass.	Assistant, Shop Electric Plant, General Electric Co., Lynn, Mass.
KENYON, SUSAN ELNORA (MRS. FRED K. CRANDALL).....Biol. Kingston.	At home.
MITCHELL, CLOVIS WILLIAM....Civ. Eng. North Scituate.	Superintendent of Schools.
ROSE, ORPHA LILLIE (MRS. HENRY A. CONGDON)..Gen. Sci. Kingston.	Teacher.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SHELDON, GEORGE WARE..... 6039 Hoeveler St., Pittsburgh, Pa.	El. Eng.	With Westinghouse Electric Co.
SHERMAN, MARY ALBRO (MRS. FRED M. MANLY)..... West Fairlee, Vt.	Agr.	At home.
SMITH, JOHN LEBROC..... A. M., Brown University, 1915. 41 Holmes Ave., Waterbury, Conn.	El. Eng.	Teacher of Mathematics, Crosby High School.
WHIPPLE, LUCIUS ALBERT..... 19 Walker Ave., Saylesville.	Civ. Eng.	Superintendent, State Home and School, Providence.

1909

CARGILL, RHOBIE LUCELIA..... 183 Pearl St., Providence.	Appl. Sci.	Teacher of Mathematics, Technical High School.
CRAIG, JAMES MCINTYRE..... Santa Fe, 1074. Rosario, Argentine.	Agr.	Gardener and Merchant.
CRANDALL, FRED KENYON..... Kingston.	Agr.	Assistant, Agronomy Dept., Experiment Station, R. I. S. C.
FRENCH, HENRY FRANK..... 57 Mall St., West Lynn, Mass.	El. Eng.	Turbo-Generator Engineer, General Electric Co.
HOWE, ALBERT MENDEL..... 20 Follen St., Boston, Mass.	El. Eng.	Inspector, Bay State St. Ry. Co.
KNOWLES, WALTER Kingston.	Civ. Eng.	Seaman, U. S. Navy.
LEE, ALFRED ROGERS..... Decatur Heights, Bladensburg, Md.	Agr.	Animal Husbandman, in Poultry Investigation, Bureau of Animal Industry, U. S. Dept. of Agriculture.
MORAN, WALTER JOHN..... R. F. D., Uncasville, Conn.	Civ. Eng.	Civil Engineer, N. Y., N. H. & H. R. R. Co.
MOYER, LOUIS EARL..... Seneca Falls, N. Y.	Civ. Eng.	Civil Engineer, State of New York, Commission of Highways.
ROCKWELL, RUBY BELLE (MRS. JOHN O'LOUGHLIN)..... 604 N. Salina Ave., Syracuse, N. Y.	Chem.	At home.
SMITH, ELMER FRANCIS..... 225 Walnut St., Roselle Park, N. J.	El. Eng.	Principal Roselle Park High School.
TISDALE, HARRY ROBERT..... Mass. Inst. Technology, 1911. 360 Broad St., New London, Conn.	Chem.	Chemist and Foreman, Brainerd & Armstrong, Silk M'rs.
TUCKER, ELLEN CAPRON..... Kingston.	Gen. Sci.	At home.

1910

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BURGESS, PAUL STEERE.....	Chem. Eng. M. S., University of Illinois, 1911. Honolulu, Hawaii.	Chief Chemist and Bacteriologist, with Hawaiian Sugar Planters' Association, Experiment Sta- tion.
CARPENTER, RANDOLPH HAYWOOD	El. Eng. 632 East 26th St., Brooklyn, N. Y.	Sales Engineer, Westinghouse Electric & Mfg. Co., 165 Broad- way.
CUMMINGS, ROBT. WINTHROP	Mech. Eng. 56 Fillmore St., Phillipsburg, N. J.	Tool Supervisor, Hammer Drill Dept., Ingersoll-Rand Co.
GOODALE, RALPH WALDO.....	Civ. Eng. 921 Howard Ave., New Haven, Conn.	Draftsman, Real Estate Dept., N. Y., N. H. & H. R. R. Co.
HARDY, JOHN IRA.....	Gen. Sci. Ph. D., Univ. of Missouri, 1917. 817 Grand Ave., Laramie, Wyoming.	Wool Specialist, Univ. of Wyom- ing Experiment Station.
HEATH, BERTHA MAY.....	Agr. Kingston.	Assistant, Animal Pathology, R. I. State College Experiment Sta- tion.
KENYON, AMOS HARRIS.....	El. Eng. 131 Abbott St., Providence.	Traffic Chief, American Tel. & Tel. Co.
LAMOND, HELEN SCOTT (MRS. R. H. CARPENTER)....	Gen. Sci. 632 East 26th St., Brooklyn, N. Y.	At home.
MOUNCE, LEROY LEIDMAN.....	Agr. South Woodstock, Vt.	Manager, Upwey Farms.
PEABODY, GEORGE ABBOTT.....	El. Eng. Schenectady, N. Y.	Erecting Engineer, Construction Dept., General Electric Co.
SHERMAN, JOHN LELAND.....	Agr. R. F. D. 147, Mansfield, Mass.	Farmer.
SMITH, HIRAM JAMESON.....	Civ. Eng.	Second Lieutenant, Engineers, 503rd Service Regt., Co. C., Amer. Exp. Force.
WAGNER, ALBERT FREDERIC.....	El. Eng. M. S., Purdue Univ., 1913. 65 Hamilton St., Geneva, N. Y.	Asst. Professor of Physics, Ho- bart College.
WHEELER, RICHARD HOWES.....	El. Eng. Virginia St., Charlestown, West Va.	Engineer.
WORRALL, DAVID ELBRIDGE.....	Chem. M. A., Harvard Univ., 1911. R. F. D. No. 3, Box 86, Vienna, Va.	Research Work, Gas Defence, Washington, D. C.

1911

ANDREWS, CARMEN NICHOLS...	Appl. Sci. Slocums.	Teacher, A. P. Hoyt School, East Providence.
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NAME AND ADDRESS.	COURSE.	OCCUPATION.
ANGILLY, CHARLES ENOCH, JR.. 1016 W. 23d St., Los Angeles, Cal.	Civ. Eng.	Second Lieutenant, Engineers, R. C., El Paso, Texas.
EASTERBROOKS, HAROLD ARNOLD..... 280 Benefit St., Providence.	Biol.	Student, Tufts Medical School, Boston.
EASTERBROOKS, LOUIS CHURCH..... 280 Benefit St., Providence.	Agr.	In business.
GILCHREST, CLYDE RONALD.... 1228 Franklin Ave., Wilkesburg, Pa.	Elec. Eng.	Commercial Engineer, Supply Dept., Westinghouse Electric and Manufacturing Co.
HARRIS, BURTON KENNETH.. R. F. D., Saylesville.	Chem. Eng.	First Lieutenant, Inf., Amer. Expeditionary Force.
HEALY, PATRICK JOSEPH..... 400 Madison Ave., New York.	Agr.	Gardener, care Ralph Armstrong.
KENT, ROBERT WILLARD..... New York City.	Mech. Eng.	First Lieutenant, Ord. Dept., Aberdeen Proving Ground, Aberdeen, Md.
MINOR, ARTHUR JACOB..... C. E., R. I. S. C., 1915.	Civ. Eng.	Captain, 21st Engineers, Amer. Expeditionary Force.
NEAL, WILLIAM THOMAS..... Walton, New York.	Agr.	Proprietor of Tripp Floral Co.
ROBINSON, BENJ. ROWLAND.. 1 Bay State Road, Worcester, Mass.	Mech. Eng.	Designing Engineer, Sanford-Riley-Stokes Co.
RUPRECHT, RUDOLF WILLIAM.. M. S., Mass. Agr. College, 1914. Ph. D., Mass. Agr. College 1916. Gaul St. and Wheatshaf Lane (Frankford Station), Philadelphia, Pa.	Appl. Sci.	Chief Chemist and Superintendent of Fertilizer Factory, F. W. Junnell & Co.
SAFFORD, HOWARD ALBERT..... National Soldiers' Home, Maine.	Agr.	Chief Gardener.
TUCKER, HARRIET TABER (MRS. DAVID E. WORRALL)... R. F. D. No. 3, Box 86, Vienna, Va.	Gen. Sci.	At home.
WADE, CEYLON RAYMOND..... Box 104, Bridgeton.	Civ. Eng.	Civil Engineer, with Interstate Commerce Commission, Division of Valuation.

1912

BARLOW, HENRY NEWELL..... Sharon, Conn.	Elec. Eng.	Dairy Farmer.
BIGELOW, CARLE MUZZY..... 1003 Washington St., Evanston, Illinois.	Appl. Sci.	Chief Efficiency Engineer, Cooley & Marvin Co., Accountants and Production Engineer.
CALDWELL, DOROTHY WALCOTT.. M. S., R. I. S. C., 1914. Kingston.	Civ. Eng.	Assistant in Bacteriology, Experiment Station, R. I. S. C.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CLARKE, PHILIP HARRISON.... 714 Chrisler Ave., Schenectady, N. Y.	Elec. Eng.	Industrial Control Engineer, General Electric Co.
COBB, ELECTRA HENRIETTA (MRS. JOHN L. SHERMAN)..... R. F. D. 147, Mansfield, Mass.	Home Econ.	At home.
DOLL, WALTER..... Greenstone, Penn.	Mech. Eng.	Plant Superintendent, Advance Industrial Supply Co.
HENDERSON, ETHEL PIERCE (MRS. E. K. WILCOX)..... 34 Raymond St., New London, Conn.	Appl. Sci.	Instructor in Biology, Vocational High School.
KENYON, ANNIE ELIZA (MRS. S. C. WEBSTER, JR.).. North Easton, Mass.	Appl. Sci.	At home.
LARKIN, CHARLES HERBERT.... 56 Bower St., West Medford, Mass.	Civ. Eng.	Engineer, with Commission of Inquiry into Railways and Transportation, Canadian Government.
NUTTING, BERTHA MAY (MRS. LEVERICH G. LENHAM)... 403 Lafayette Ave., Buffalo, N. Y.	Home Econ.	At home.
PATTERSON, ARTHUR JOHN.... 758 Quebec Place, N. W., Washington, D. C.	Elec. Eng.	Captain, 29th Engineers, R. C.
RICHMOND, FRED ALLEN..... 35 Pier St., Yonkers, N. Y.	Elec. Eng.	Assistant in Testing Dept., N. Y. Central Railroad Co.
SHERMAN, GEORGE WM., JR.... M. S., Purdue Univ., 1914. 4 Murdock Flats, West Lafayette, Ind.	Elec. Eng.	Instructor in Physics, Purdue University.
*SLATER ALLAE CORDELIA (MRS. ARTHUR J. MINOR)	Home Econ.	
WARNER, DAVID EDMOND, JR..... Storrs, Conn.	Agr.	Instructor in Poultry Husbandry.
WEBSTER, SAMUEL C., JR..... North Easton, Mass.	Agr.	Instructor, Vocational Agriculture.
WHELAN, WILLIAM JOSEPH.... Kingston.	Appl. Sci.	Supt. of Buildings, R. I. S. C.

1913

ALEXANDER, RALPH IRWIN... 21 Hawthorne Ave., Troy, N. Y.	Mech. Eng.	Instructor in Mechanical Engineering, Rensselaer Polytechnic Institute.
BATES, REUBEN CHARLES..... 146 W. Concord St., Boston, Mass.	Civ. Eng.	Student, Harvard Medical School.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BRETT, CLARENCE ELMER.....Agr. Morrisville, N. Y.		Instructor in Poultry, N. Y. State School of Agriculture.
BRIDEN, FRANK HAROLD.....Mech. Eng. Port Hope, Ontario, Canada.		Supt. Dominion Works, Nichol- son File Co.
COHEN, BENJAMIN.....Elec. Eng. Room 404, Gray Apartments, Wilkinsburg, Pa.		Correspondent and Employment Agent, Westinghouse Electric & Mfg. Co.
CONGDON, ESTHER LOOMIS..Home Econ. (MRS. ARTHUR L. REYNOLDS), 26 Farmington Ave., Waterbury, Conn.		At home.
CORR, JOHN WILLIAM.....Appl. Sci. East Greenwich.		Assistant Superintendent, Green- wich Bleachery.
ELKINS, DOROTHY DEARBORN (MRS. ROBERT W. KENT)...Home Econ. 10 Moody St., Amesbury, Mass.		At home.
ELKINS, MARGUERITE WHITE, Home Econ. M. S., R. I. S. C., 1914. Providence.		Assistant, Health Dept., 245 Canal St., Providence.
HART, CRAWFORD PECKHAM.....Agr. Lakeville, Conn.		Instructor in Agriculture and Farm Manager, Riggs School.
IRONS, WALTER COLWELL.....Agr. North Scituate.		Officers' Training School, Camp Dix, N. J.
KYLE, THOMAS .....Agr. Balboa, Canal Zone.		Plumber.
MITCHELL, IRVING CALVARY...Appl. Sci. Greenville.		Supt. of Schools, towns of Gloces- ter and Smithfield.
REDDING, WILLIAM FRANCIS..Elec. Eng. Caminio Nerevo, Mayaguez, Porto Rico.		Officers' Training School, San Juan, Porto Rico.
REINER, WALDO .....Civil Eng. 45 Strong Place, Brooklyn, N. Y.		Ensign, Civil Eng. Corps, N. R. F., Naval Aviation, 2932 Upton St., N. W., Washington, D. C.
REYNOLDS, ARTHUR LESLIE...Elec. Eng. 26 Farmington Ave., Waterbury, Conn.		Teacher, Math., High School.
SLOCUM, GEORGE EDWIN.....Elec. Eng. 154 Bedford Ave., Buffalo, N. Y.		District Sales Mgr., Allen-Bradley Co.
*STECK, FRANK .....Chem. Eng.		
TURNER, WALTER RAYMOND...Appl. Sci. 21 Sarah St., Providence.		Asst. Mgr., River Spinning Co., Valley Falls.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILCOX, ERROLL KENYON..... 34 Raymond St., New London, Conn.	Civ. Eng.	Instructor in Mathematics, Vocational High School.
WOOD, SUSIE STANTON..... 4th and Walnut Sts., Lebanon, Pa.	Home Econ.	Dietitian, Good Samaritan Hospital.
YOUNG, JAMES HANNIBAL..... Allerton House, 138 East 38th St., New York City.	Appl. Sci.	With Baker, Ayling & Young, Investment Bankers.

1914

ALDRED, JAMES HILTON..... Ashton.	Mech. Eng.	Officers' Training School, Camp Devens, Mass.
ANDERSON, WILLIAM EDWARD..... 3237-R St., Lincoln, Nebraska.	Agr.	Instructor, Agr. Chem. Dept., Univ. of Nebraska.
ASPINWALL, FREDERICK OTTO..... 637 Main St., Pawtucket.	Chem. Eng.	First Lieutenant, Quartermaster Corps, N. A.
BAXTER, FRANK HOWARD.... 816 B St., S. W., Washington, D. C.	Mech. Eng.	Shell Division, Ordnance Dept., U. S. Army.
BENSON, ROBERT JOHN..... 5963 Maple Ave., St. Louis, Mo.	Elec. Eng.	Electrical Maintenance and Construction Engineer, Wagner Elec. Mfg. Co.
BOULESTER, EDWARD JAMES... 617 Academy Ave., Providence.	Appl. Sci.	Chemist, Charles S. Tanner Co.
BROWNING, HAROLD WILLIAM.. M. S., Univ. of Wisconsin, 1916. Biology Building, Univ. of Wisconsin, Madison, Wisconsin.	Appl. Sci.	Hospital Apprentice, N. R., Naval Hospital, Newport, R. I.
CONNOR, THOMAS ROWLEY..... Peace Dale.	Civ. Eng.	In Maintenance Dept., N. Y., N. H. & H. R. R. Co.
DAVIS, HENRY ELLIS..... Providence.	Agr.	Acting Mgr., R. I. Branch American Surety Co., 936 Grosvenor Bldg., Providence.
ESTY, JAMES RUSSELL..... M. S., Brown University, 1915. 115 Waterman St., Providence.	Chem. Eng.	Graduate Student, Brown University, Milk Bacteriologist, Providence Health Department.
FINCH, MYRON WHITMARSH..... 195 Morris Ave., Providence.	Agr.	Assistant Instructor Phys. Training, Brown University.
FORD, HELEN WHEELER.... 15 Rumford St., Concord, N. H.	Home Econ.	Teacher of Domestic Science, High School.
HAWKINS, MYRON ANGELL..... R. F. D., Oaklawn.	Agr.	Farm Manager, for J. F. Comstock.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JONES, CARLTON WALTER..... North Scituate.	Civ. Eng.	Resident Engineer, Aberthau Con- struction Co.
KARMANN, HERMAN HARRY... 156 Cardoni St., Detroit, Mich.	Civ. Eng.	Surveyor.
KINNEY, LORENZO FOSTER..... Kingston.	Appl. Sci.	Lowland Rhododendron Farm.
REINER, FRIEDA 45 Strong Place, Brooklyn, N. Y.	Home Econ.	Associate Professor, Home Econ- omics Department, New Hamp- shire State College.
REINER, HERBERT Portsmouth, N. H.	Agr.	With American Agricultural Chemical Co., 92 State St., Boston.
ROSSI, LOUIS 139 Tower St., Westerly.	Civ. Eng.	Civil Engineer and Draftsman.
SAFFORD, EDITH MARIE (MRS. HERBERT REINER).. Portsmouth, N. H.	Home Econ.	At home.
SULLIVAN, JOHN LEO..... 20 Maple St., Milford, Conn.	Mech. Eng.	Teacher, High School, Bridgeport, Conn
TULLY, WILLIAM HENRY..... Wakefield.	Appl. Sci.	
TURNER, HARVEY ROBERT..... 137 East Manning St., Providence.	Civ. Eng.	In charge of Science Dept., Sam Houston College, Austin, Texas.
WEBB, WILLIAM HARRY.....	Elec. Eng.	Engineer, Moody Engineering Co., 90 West St., New York.
WEBSTER, EARL CLIFTON..... 67 Daboll St., Providence.	Civ. Eng.	Second Lieutenant, Infantry, U. S.

1915

BALDWIN, GEORGE HOLLAND..... Kingston.	Agr.	Agronomy Demonstrator, Ex- tension Service, R. I. S. C.
BARNEY, RAYMOND LIVINGSTON, Homer, Minnesota.	Appl. Sci.	Scientific Assistant, U. S. Fish- eries Biological Station.
BELFIT, ROBERT WILLIAM.... 47 Prospect St., Waterbury, Conn.	Chem. Eng.	Research Chemist, Scovill Mfg. Co.
BORDEN, NORMAN HARRISON.. Providence.	Chem. Eng.	Officers' Training School, Camp Dix, N. J.
BRECHIN, JOHN Wilkesburg, Pa.	Mech. Eng.	Inspector, Ordnance Dept., U. S. Navy.
BROWNELL, KENNETH ALLEN 22 Manchester St., Pawtucket.	Chem. Eng.	Chemist, River Spinning Co., Val- ley Falls.
COLEMAN, CARL LAFAYETTE..... New London, N. H.	Agr.	Officers' Training School, Camp Devens. Mass.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
DODGE, WILLIAM EARL.....	Civ. Eng.	Civil Engineer, Providence Water Supply Board, Scituate Reservoir Project.
28 Portland St., Providence.		
GATES, CURTIS WOLCOTT.....	Chem. Eng.	First Lieutenant, 309th Inf., Co. A, Camp Dix, N. J.
50 Naumag Ave.,		
New London, Conn.		
HALL, CARLISLE	Agr.	Officers' Training School, Military Branch, Chattanooga, Tenn.
187 Althea St., Providence.		
HARDING, ADA LAPLACE....	Home Econ.	Home Economics Demonstrator, Extension Service, R. I. S. C.
Kingston.		
HARRIS, LEON IRVING.....	Elec. Eng.	With Chalmers Motor Co.
465 Lycaste Ave., Detroit, Mich.		
HUDSON, ROYAL CARLTON.....	Appl. Sci.	Student, Harvard Medical School.
34 Mumford St., Phenix.		
HUNTER, ALBERT CLAYTON.....	Appl. Sci.	Microbiological Lab., Bureau of Chemistry, Dept. of Agr.
816 B St., S. W., Washington, D. C.		
JACKOWITZ, JOHN LOUIS.....	Appl. Sci.	Officers' Training School, Camp Dix, N. J.
269 Martin St., East Providence.		
KEITH, LAWRENCE FULLER.....	Agr.	Captain, Field Artillery.
Marlow, Oklahoma.		
KIVLIN, ALFRED PATRICK.....	Elec. Eng.	Second Lieutenant, 301st Engineers, N. A., Amer. Expeditionary Force.
43 School St.,		
North Attleboro, Mass.		
LENNOX, FRANK JOSEPH.....	Chem. Eng.	Officers' Training School, Camp Devens, Mass.
916 Beacon St., Boston, Mass.		
MEADE, JOHN EDWARD.....	Civ. Eng.	Civil Engineer, with N. Y., N. H. & H. R. R. Co.
160 Broad St., Providence.		
MILLER, WESLEY CLIFTON.....	Elec. Eng.	First Lieutenant, Signal Corps, 53rd Artillery, C. A. C., Amer. Expeditionary Force.
NICHOLS, JOSEPH ELTON.....	Mech. Eng.	Sergeant, Co. F., 301st Engineers, Camp Devens, Mass.
NORDQUIST, HARRY O. VALDIMAR,		Second Lieutenant, C. A. C., Fortress Monroe, Va.
83 Hamlin St., Providence.	Civ. Eng.	
PARKER, RALPH LANGLEY.....	Agr.	Corporal, Co. F., 301st Supply Train, Camp Devens, Mass.
Brockton, Mass.		
WATSON, ADELAIDE GILBERT		
(MRS. FRANK H. BRIDEN) Home Econ.		At home.
Port Hope, Ontario, Canada.		
WHITTAKER, LEROY ALLEN....	Elec. Eng.	Second Lieutenant, C. A. C.
Honolulu.		
WILCOX, HAROLD CLAYTON.....	Agr.	Teacher of Science, Columbus Academy.
1495 Franklin Ave., Columbus, Ohio.		

1916

NAME AND ADDRESS.

COURSE.

OCCUPATION.

ALDRICH, DANIEL GASKILL.....Agr. Northwood Center, N. H.		Instructor in Science, Coe's Northwood Academy.
BECKER, WILLIAM JOSEPH, JR., 215 So. Van Dien Ave., Mech. Eng. Ridgewood, N. J.		Chief Inspector, Inspection Div., Ordnance Dept., U. S. A.
BURR, DOROTHY ISABELLE...Home Econ. (MRS. THOS. W. FREEMAN), Chickamauga Park, Ga.		At home.
CARLETON, EVERETT AUGUSTUS.....Agr. Hillsboro, N. H.		Teacher, Hillsboro High School.
CHANTLER, AMBROSE ROYLE..Chem. Eng. 130 West Ave., Providence.		Chemist, U. S. Finishing Co., Providence.
CONYERS, CLARENCE JOHN.....Agr.		Officers' Training School, Camp Dix, N. J.
CORDIN, GILBERT RALPH.....Chem. Eng. 16 Harvard Ave., Providence.		Second Lieutenant, Quartermas- ter Corps, N. A., Camp Devens, Mass.
CURRAN, EMILIE MAY.....Home Econ. (MRS. NORMAN H. BORDEN), 10 Maynard St., Pawtucket.		At home.
DANIELS, HENRY FALES.....Civ. Eng. 113 Barton St., Pawtucket.		Officers' Training School, Camp Dix, N. J.
FARON, FRANCIS ALOYSIUS....Elec. Eng. 213 Seward Place, Schenectady, N. Y.		Testing Dept., General Electric Company.
FIELD, ERNEST GEORGE.....Mech. Eng. 1510 Poplar St., Philadelphia, Pa.		Production Engineer, Foreman Artillery Planning Room, Frankford Arsenal, Bridesburg, Pa.
FINE, SOLOMON .....Appl. Sci. M. S., R. I. S. C., 1917. Columbia, Mo.		Graduate Student, University of Missouri.
FRASER, DEAN BLENUS.....Civ. Eng. 37 West Elm St., Brockton, Mass.		Aviation Section, S. R. C., Park Field, Memphis, Tenn.
FREEMAN, THOMAS WILLIAM..Civ. Eng. Chickamauga Park, Georgia.		First Lieutenant, Co. B, 52nd Inf.
GLASHEEN, RALPH EARLE.....Civ. Eng.		First Lieutenant, C. A. C., Dept. Light Railways, Amer. Expedi- tionary Force.
HANLIN, WILLIAM FRANK.....Agr. 25 Lincoln Ave., Arlington.		Second Lieutenant, Inf., Char- lotte, N. C.

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Wakefield.		
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LAGERSTADT, SETH FREDERICK HADLEY,		The Crystal Poultry Farm.
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778 Chestnut St., Springfield, Mass.		Devens, Mass.
LLOYD, LESTER WILLIAM.....	Agr.	County Agent, Newport Farm
Newport.		Bureau.
LUSSIER, GEORGE EMILE.....	Elec. Eng.	Officers' Training School, Camp
423 Rebecca Ave., Wilkensburg, Pa.		Meade, Md.
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Hartford, Conn.		terials.
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East Providence.		Amer. Expeditionary Force.
MEEARS, ETTA ELIZABETH		
(MRS. ERNEST G. FIELD) ..	Home Econ.	At home.
1510 Poplar St., Philadelphia, Pa.		
MILNES, CHARLES IRVING....	Chem. Eng.	Chemist, Wanskuck Co.
46 Priscilla Ave., Providence.		
PALMER, THEODORE ANDREW.....	Agr.	Officers' Training School, Camp
Hope Valley.		Devens, Mass.
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4250 Langland St., Cincinnati, Ohio.		
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1917

AMES, ARNOLD WILLARD..... 18 Washington St., Quincy, Mass.	Mech. Eng.	Shipbuilding, Fore River Plant,
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BARTELS, HENRY ARTHUR..... 430 Elliot St., Alexandria, La.	Agr.	Bacteriologist, U. S. Public Health Service.
BROADFOOT, HENRY HARRINGTON, Westerly.	Chem. Eng.	Teacher, West Warwick High School.
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WISBEY, HERBERT ANDREW..... Plymouth, N. H.	Agr.	Teacher, The Holderness School.

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BULLETIN OF RHODE ISLAND STATE COLLEGE

VOL XV NO. 1.

FOR MAY, 1919

CATALOG OF THE COLLEGE



KINGSTON, R. -I.

1919

PUBLISHED QUARTERLY BY THE COLLEGE

MAY, AUGUST, NOVEMBER, FEBRUARY

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ADA LAPLACE HARDING, B. S.	‡Emergency Home Demonstration Agent Southern R. I. Farm Bureau
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College Calendar

Monday, September 15, 1919,

Examination of Entering and Conditioned Students, 9 A. M.

Tuesday, September 16.....Registration, 9 A. M.

Wednesday, September 17.....Recitations begin, 8 A. M.

Wednesday, November 26, 12 M. }
Monday, December 1, 8 A. M. }.....Thanksgiving Recess

Friday, December 19, 4:35 P. M. }
Monday, January 5, 1920 8 A. M }.....Christmas Recess

Friday, February 6, 4:35 P. M.....First Term Ends

Tuesday, February 10.....Second Term Begins
Registration, 9 A. M.

Tuesday, February 10.....Recitations Begin, 8 A. M.

Wednesday, March 31, 4:35 P. M. }
Tuesday, April 6 1 P. M.....}.....Easter Recess

Friday, May 14, holiday.....Arbor Day

Saturday, May 15.....Interscholastic Field Meet

Sunday, June 13.....Baccalaureate Address

Monday, June 14.....Commencement Exercises

CALENDAR.

1919.

1920.

1919.							1920.						
JUNE.	MAY.	APRIL.	MARCH.	FEB.	JAN.		JUNE.	MAY.	APRIL.	MARCH.	FEB.	JAN.	
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22	23	24	25	26	27	28	21	22	23	24	25	26	27
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RHODE ISLAND STATE COLLEGE

Foundation

The college is one of the so-called land-grant colleges. Of the purpose of these institutions Senator Morrill, the author of the national legislation which brought them into existence in all the states, says:

“The fundamental idea was to offer an opportunity in every state for a liberal and larger education to large numbers, not merely those destined to sedentary professions, but to those needing higher instruction for the world’s business, for the industrial pursuits and professions of life.” Again he says: “It was to give a chance to the industrial classes of the country to obtain a liberal education, something more than what was bestowed by our universities and colleges in general, which seemed to be based more on the English plan of giving education only to what might be called the professional classes, in law, medicine, and theology.”

The college has also a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows:

(1) The interest on \$50,000, which was the net amount received by the State from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.

(2) The annual appropriation of \$15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.

(3) The annual appropriation of \$25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as follow:

"To be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the State under the Adams Act of 1906, yielding each year \$15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting yearly to \$25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The funds coming from the general government to the State under the Smith-Lever Act of 1914, amounting yearly to \$10,000. This funds is exclusively for extension work in agriculture and home economics.

(7) The annual maintenance fund from the State, of \$40,000, used for all the purposes for which the funds of the general government cannot be used: *e. g.*, for executive and administrative work; for heating, lighting, and maintenance of buildings; for the teaching of modern languages other than English; for the teaching of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroly revised during the years 1906-07 and 1907-08. The course in home economics for young women was introduced in 1908.

Object and Organization

The function of Rhode Island State College is to aid in fostering the agricultural, industrial, and home-making life of the State. This it does in three ways: 1. by the investigation and discovery of new truths more or less directly applicable in agriculture and the industries; 2. by the direct distribution of information to the people; 3. by the organization and administration of definite courses of instruction designed to fit young men and young women for effective work in the vocational pursuits.

The first of these duties is performed by the

Experiment Station

for a description of the work of which the reader is referred to the report of the director, included in the report of the Board of Managers for the current year. A statement of its staff organization may be found on page 6 of this catalog.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all who desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, the

College Extension Division

is organized under provisions of the Smith-Lever Act, according to the recommendations of the Federal Department of Agriculture and the present prevailing practices thruout the country. The work is now arranged on a project basis and the following is a summary of the projects formulated and approved and now in force.

PROJECT NO. 1. ADMINISTRATION: This project outlines plans for organization and supervision of all the different lines of work in the Extension Division, including arrangements of budgets, organization of office work, preparation and distribution of publications, employment and supervision of workers, preparing reports of work, approval of requisitions for supplies and in general coördinating all the different activities in this branch of the college. The work is placed in charge of a Director of Extension, who is also State Leader of County Agents.

PROJECT NO. 2. COUNTY AGENT WORK: This project provides that there shall be organized in the State three farm bureau districts and that the college and the U. S. Department of Agriculture will coöperate with each of the three Farm Bureaus in the employment and supervision of a county agricultural agent. All county agents are assisted by the State Leader and by Extension Committees at the College in formulating projects for the work suggested by the Farm Bureau organizations, local Farm Bureau Committees, or by the college, and so far as possible specialists from the college aid the agents in carrying out the work under these projects.

PROJECT NO. 3. HOME ECONOMICS: A State Leader in Home Economics Extension work is engaged to organize and conduct

extension work thruout the State, for the purpose of giving instruction by means of demonstrations, personal conferences, lectures, publications, correspondence, and otherwise, concerning,—(a) Foods; their characteristics, nutritive qualities, and economical production; selection and preservation, preparation and serving. (b) Fabrics; their qualities and adaptations, methods of making into clothing and articles for household use; approved methods and agents used in laundering; care and preservation. (c) House planning; remodeling, rearrangements to secure convenience in household work and management; effective heating, lighting, water supply and sewage disposal systems. (d) Household management; the proper furnishing and keeping of the house for the purpose of economic efficiency, comfort and beauty together with simple methods of household accounting. (e) Home industries of such nature as may fit in with broad types of farming and with the financial resources, tastes, and ambitions of particular families or groups of families in relation to supplying home needs and accessible markets.

So far as finances permit, Farm Bureaus will be encouraged to employ home demonstrators and as soon as a home demonstrator is settled in a farm bureau, home economics work in that district will be carried on in coöperation with the Farm Bureau, the State Leader being recognized as joint supervisor of the work with the Farm Bureau.

PROJECT NO. 4. CLUB WORK: A State Leader with such district assistance as circumstances warrant and funds will permit is employed to conduct demonstrations with boys and girls in farm and home activities; and to organize them into clubs that take up special projects with field crops and home gardens, home canning, also poultry, pigs, and other farm animals. Instruction is given in methods of marketing crops and animals and the best way to save the surplus food products by home canning and how to prepare the canned goods for table use or to market them. Efforts are made to furnish the clubs with local leadership and field instructions essential to success in the work.

A sub-project providing for special extension work in poultry husbandry has been arranged through the coöperation of the Bureau of Animal Industry and the Extension Division in the employment of a poultry club specialist.

PROJECT NO. 5. AGRONOMY DEMONSTRATIONS: The specialist in charge of this work has had supervision of matters relating to field demonstrations in agronomy, correspondence relating to the same, soil testing, news letter service, fair exhibits, etc. Demonstrations are planned to illustrate methods of growing alfalfa, rye and vetch; selection and use of better seed-corn, etc. Soil is tested and lime requirements are determined, and along farm management lines assistance is given in planning crop rotations and in keeping simple accounts. So far as possible, field meetings will be held in connection with the demonstrations to show neighboring farmers results which will be of value to them. Since the beginning of the war, this project has been a sub-project under project No. 2.

PROJECT NO. 6. POULTRY HUSBANDRY: This project was dropped October 1, 1918, and the specialist in charge was made poultry club specialist.

PROJECT 7. Dairy Extension: A dairy specialist is employed in coöperation with the Dairy Division of the Bureau of Animal Industry, United States Department of Agriculture and the Rhode Island State Board of Agriculture for the purpose of giving advice to farmers concerning the care, feeding and management of dairy cattle, improving herds and raising of calves, erection of silos, and construction and remodeling of dairy buildings. Herd records will be introduced and assistance given in the selection of pure-bred dairy bulls and high grade cows. Special emphasis will be given to the organization and supervision of cow testing associations and bull associations where a sufficient number of cows are found.

Engineering Extension Work

In the engineering department, as well as in the other branches of the college, the endeavor is to be of the greatest possible service to the people of the State, not only in the matter of providing formal instruction to students coming to the college, but also in giving help and information to those outside the college enrollment who are desirous of extending their technical knowledge, and to whom, for one reason or another, a regular college course is impossible.

To this end there has been offered in the past a short course of two years' duration, in which instruction has been given in the elements of engineering. Experience, however, has shown that those most eager to avail themselves of this kind of instruction, and those

who would be most helped by it, are unable to leave their regular duties to attend classes at the college.

As a consequence, the short course work in engineering at the college has been discontinued, and in its place has been inaugurated the plan of extension work in engineering. Instead of taking the man away from his regular duties to bring him to the work, the present plan is to carry the work to the man.

This extension work is carried out in two chief ways,—by means of separate lectures on specific topics, and by means of progressive study in organized classes. The subjects presented are all of a technical character and are adapted to the particular needs and capabilities of the classes.

The present requirements for such class work are that a suitable place for meeting be provided, and that the attendance be regular. This regularity of attendance is a matter of the greatest importance, since without it little or no progress is possible.

Classes have been conducted in various places in The Use of the Slide Rule, Mechanism and Shop Calculations, Power Plant Computations, etc. Instruction in these and any other desired branch of engineering may be had by citizens of the State by complying with the requirements mentioned, the number of such courses being limited only by the available time of the members of the department. Also lecturers will be provided to present various phases of engineering before technical organizations and engineering societies.

The College as an Educational Agency

In its third form of activity, the purpose and work of Rhode Island State College is to give college training and culture to young men and young women, not in spite of, but thru and with, vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroly efficient worker.

I. THE DEGREE COURSES

To this end certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in math-

ematics, pure and applied; the English language as a means of inter-communication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses, moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-winning, but also preparation for citizenship, and for moral and social life, have intertwined with the vocational work and study, previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools. They thus become an integral part of the school system of the State. Young men and young women, citizens of the State and having requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are agriculture, engineering, applied science and home economics, and commencing in September 1919, vocational education courses in agriculture and home economics together with a two-year course (based on a recognized two-year normal school course) leading to the degree of Bachelor of Education.

The Agricultural Course

The agricultural course is intended to give thoro preparation for taking charge of and operating a piece of landed property. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thoro study of the sciences bearing directly on such work, viz.: botany, chemistry, geology, zoölogy, anatomy, physics, bacteriology, and entomology. In addition, it embraces the culture and mental discipline arising from the study of mathematics, drawing, English literature, composition and rhetoric, modern languages, history, economics. The course is planned

to give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first and second years; in the second half of the junior year, in addition to the required work for all students in the course, two optional lines of work are offered, one of which must be selected by the student and followed until graduation. The two lines offered are horticulture and animal husbandry. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. All candidates for a degree in the agricultural course are required to spend at least six months in practical farm work before the degree is granted. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I ₁ —Rhetoric and Composition.	3	English I ₂ —Rhetoric and Composition.	3
Math. III—Algebra	2½	Chemistry II—General Chem. and Qualitative Analysis	3 [1½]
Math. II—Trigonometry	2½	Botany I ₂ —General	1 [2]
Chemistry I—General	2 [1½]	An. Husb. I—Stock Judging	[2]
Botany I ₁ —General	1 [2]	An. Husb. III—Breeds	2
Hort. I—Propagation of Plants	1 [1]	Hort. II—Vegetable Gardening	2
Freehand Drawing II—Pencil	[1]	Hort. IV—Spraying and Pruning	1 [1]
Mil. Sci. and Tactics I ₁ —Drill	[1]	Mil. Sci. and Tactics I ₂ —Drill	[1]
Mil. Sci. and Tactics II ₁ —Theory	1	Mil. Sci. and Tactics II ₂ —Theory	1

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work	1	English III—Argumentation	2
English VIII—Interpretive Reading	1	Chemistry XIV—Agricultural Chemistry	4
Chemistry IV—Organic Chemistry	3 [1]	Physics I—Descriptive Physics	5
Botany II—Botany of Crops and Weeds	1 [2]	Botany III ₂ —Trees and Shrubs	[1]
Botany III ₁ —Trees and Shrubs	[1]	Zoology Xb—Vertebrate Zoology	2 [2]
Agronomy II—Forage Plants	2	Geology I	2
Zoology Xa—Vertebrate Zoology	2 [2]	Mil. Sci. and Tactics I ₄ —Drill	[1]
Civil Engineering I—Surveying	1 [2]	Mil. Sci. and Tactics IV ₂ —Theory	1
Mil. Sci. and Tactics I ₃ —Drill	[1]		
Mil. Sci. and Tactics IV ₁ —Theory	1		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IX—Debating	1	Agronomy IV—Farm Crops	3 [1]
An. Husb. X—Vet. Practice	3	Agronomy VII—Farm Management	2
An. Husb. XII—Poultry Culture	1	History I—Industrial History	3
Agron. III—Soils and Fertilizers	4 [1½]	Mil. Sci. and Tactics V ₂ —Theory	
Hort. III—Fruit Culture	2	Mil. Sci. and Tactics I ₆ —Drill	
Hort. XVI—Landscape Gardening	1 [2]	Physical Training	1
English IV—Modern Essays	3	Options: A. or B.	
Mil. Sci. and Tactics V ₁ —Theory		All of the subjects in one of the following groups must be chosen.	
Mil. Sci. and Tactics I ₅ —Drill		A. Horticulture	[2]
Physical Training	[1]	Botany IV—Forestry	
		Hort. XVII—Small Fruits	
		Zoology IV—Economic Entomology	2 [1]
		Elective	3 or 4
		B. Animal Husbandry	
		An. Husb. VII—Dairy Practice	1 [2]
		Agronomy VI—Farm Machinery	2 [1]
		Elective	4

Senior Year

FIRST TERM		CREDITS	SECOND TERM		CREDITS
Economics I—Economics.....		3	English V—Shakespeare.....		3
English X—Oratorical Writing and Extemporaneous Speaking.....		1	Agronomy X—Agricultural Experimen- tation.....		3
An. Husb. VI—Feeds and Feeding.....		3	Bacteriology I ₂ —General.....	1 [2]	
Agronomy XI—Plant Breeding.....		3	Mil. Sci. and Tactics VI ₂ —Theory..	}	3
Bacteriology I ₁ —General.....	1 [2]		or		
Mil. Sci. and Tactics VI ₁ —Theory..	}	3	Elective.....	}	1
or			Mil. Sci. and Tactics I ₈ —Drill.....		
Elective.....		3	or		
Elective.....		3	Physical Training.....		
Mil. Sci. and Tactics I ₇ —Drill.....	}	1	Options: A. or B.		
or			All of the subjects in one of the fol- lowing groups must be chosen.		
Physical Training.....			A. <i>Horticulture</i>		
Options: A. or B.			Botany IV—Forestry.....	[2]	
A. <i>Horticulture</i>			or		
Hort. X—Pomology.....	1 [2]		Hort. XVII—Small Fruits.....	2 [1]	
B. <i>Animal Husbandry</i>			Elective.....	3 or 4	
Elective.....	3		B. <i>Animal Husbandry</i>		
			An. Husb. IV—Breeding.....	3	
			Elective.....	3	

The Engineering Course

The engineering course has the same duration and the same general plan as that usually offered in the standard technical colleges. Students will follow the course as laid down until the sophomore year, at which time they must elect one of the four optional lines offered, viz.: mechanical, electrical, civil, and chemical engineering. Any line of work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and efficient work in the great manufacturing and commercial industries of the State; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. The tabulated course follows:

Freshman Year

For the first year the course is the same for all students of engineering.

FIRST TERM		CREDITS	SECOND TERM		CREDITS
English I ₁ —Rhetoric and Composition.....		3	English I ₂ —Rhetoric and Composition.....		3
Math. I—Algebra.....		2½	Math. VIIIa—Analytics.....		5
Math. II—Trigonometry.....		2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]	
Chemistry I—General.....	2 [1½]		Mech. Eng. V—Descriptive Geometry.....	1 [2]	
Mech. Eng. I—Mechanical Drawing.....	[4]		Mech. Eng. III—Pattern Making.....	[2]	
Mech. Eng. II—Forge and Foundry.....	[2]		Mil. Sci. and Tactics I ₂ —Drill.....	[1]	
Mil. Sci. and Tactics I ₁ —Drill.....	[1]		Mil. Sci. and Tactics II ₂ —Theory.....	1	
Mil. Sci. and Tactics II ₁ —Theory.....	1				

MECHANICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	Physics II ₂ —General.....	4
Physics II ₁ —General.....	4	Physics III ₂ —Laboratory.....	[1½]
Physics III ₁ —Laboratory.....	[1½]	Math. XI—Calculus.....	5
Math. X—Calculus.....	5	Mech. Eng. VI ₂ —Mechanical Drawing	[2]
Mech. Eng. VI ₁ —Mechanical Drawing	[2]	Mech. Eng. XII—Mechanism.....	3
Civil Eng. I—Surveying.....	1 [2]	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Mil. Sci. and Tactics IV ₂ —Theory....	1
Mil. Sci. and Tactics IV ₁ —Theory....	1		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		Mil. Sci. and Tactics V ₂ —Theory....	3
Mil. Sci. and Tactics V ₁ —Theory....	1	Mech. Eng. IX ₂ —Heat Engineering...	1½
Mech. Eng. VIII—Machine Drafting...	[3]	Mech. Eng. X ₁ —Applied Mechanics...	3½
Mech. Eng. IX ₁ —Heat Engineering...	3	Mech. Eng. XI—Hydraulics.....	3
Mech. Eng. X ₂ —Applied Mechanics...	5	Mech. Eng. XIII—Valve Gears.....	[3]
Mech. Eng. XIV ₁ —Machine Shop.....	[3]	Mech. Eng. XIV ₂ —Machine Shop.....	1 [1]
Mech. Eng. XV—Experimental Engineering a.....	1 [1]	Mech. Eng. XVI—Experimental Engineering b.....	[1]
Mil. Sci. and Tactics I ₅ —Drill.....	[1]	Mil. Sci. and Tactics I ₆ —Drill.....	[1]
or		Physical Training.....	
Physical Training.....			

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics.....	3	Mech. Eng. XVIII—Experimental Engineering d.....	[2]
English X—Oratorical Writing and Extemporaneous Speaking.....	1	Mech. Eng. XIX—Heating and Ventilation.....	1
Mech. Eng. XVII—Experimental Engineering c.....	2 [1½]	Mech. Eng. XX ₂ —Machine Design...	[3]
Mech. Eng. XX ₁ —Machine Design...	[3]	Mech. Eng. XXII ₂ —Assigned Work..	3
Mech. Eng. XXI—Power Plants and Design.....	2 [1]	or	
Mech. Eng. XXII ₁ —Assigned Work.	3	Mil. Sci. and Tactics VI ₂ —Theory....	2
or		Mech. Eng. XXIII—Dynamics of Machines.....	3
Mil. Sci. and Tactics VI ₁ —Theory....	3	Mech. Eng. XXVI—Business Organization and Management.....	2
Elec. Eng. I—Theory of Direct Currents.....	3	Elec. Eng. IV—Theory of Alternating Currents.....	[3]
Mil. Sci. and Tactics I ₇ —Drill.....	[1]	Elec. Eng. II—Direct Current Laboratory.....	[3]
or		Mil. Sci. and Tactics I ₈ —Drill.....	[1]
Physical Training.....		or	
		Physical Training.....	

ELECTRICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	Physics II ₂ —General.....	4
Physics II ₁ —General.....	4	Physics III ₂ —Laboratory.....	[1½]
Physics III ₁ —Laboratory.....	[1½]	Math. XI—Calculus.....	5
Math. X—Calculus.....	5	Mech. Eng. VI ₂ —Mechanical Drawing	[2]
Mech. Eng. VI ₁ —Mechanical Drawing...	[2]	Mech. Eng. VII—Machine Shop.....	[3]
Civ. Eng. I—Surveying.....	1 [2]	Elec. Eng. IIIa—Prin. of Elec. Eng...	½
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Mil. Sci. and Tactics IV ₁ —Theory....	1	Mil. Sci. and Tactics IV ₂ —Theory....	1

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory....	1	Mil. Sci. and Tactics V ₂ —Theory....	3
English IX—Debating.....	3	Elec. Eng. II—Direct Current Lab....	[3]
Elec. Eng. I—Theory of Direct Cur-	3	Elec. Eng. IV—Theory of Alternating	2
rents.....	1	Currents.....	3
Elec. Eng. IIIb—Prin. of Elec. Eng....	1 $\frac{1}{2}$	Mech. Eng. IX ₂ —Heat Engineering....	1 $\frac{3}{4}$
Physics V—Electrical Meas.....	1 $\frac{1}{2}$	Mech. Eng. X ₂ —App. Mechanics.....	3 $\frac{1}{4}$
Physics VI—Prin. of Illumination....	3	Mech. Eng. XI—Hydraulics.....	1 [1]
Mech. Eng. IX ₁ —Heat Engineering....	5	Mech. Eng. XVI—Exp. Engineering b.	[1]
Mech. Eng. X ₁ —App. Mechanics.....	[1]	Mil. Sci. and Tactics I ₆ —Drill.....	
Mil. Sci. and Tactics I ₅ —Drill.....		or	
or		Physical Training.....	
Physical Training.....			

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics.....	3	Elec. Eng. V ₂ —Theory of Alternating	3
English X—Oratorical Writing and Ex-	1	Currents.....	[3]
temporaneous Speaking.....	3	Elec. Eng. VI ₂ —Alt. Current Lab....	[3]
Elec. Eng. V ₁ —Theory of Alternating	3	Elec. Eng. VII—Design of Electrical	[3]
Currents.....	[3]	Machinery.....	1
Elec. Eng. VI ₁ —Alt. Current Labora-	[3]	Elec. Eng. VIII—Telephone Engineer-	4
tory.....		ing.....	2
Elec. Eng. XII ₁ —Assigned Work....	[3]	Elec. Eng. X—Electric Power Trans-	[3]
or		mission.....	
Mil. Sci. and Tactics VI ₁ —Theory..	2 1 $\frac{1}{2}$	Elec. Eng. XI—Electric Railways....	2
Mech. Eng. XVII—Experimental En-	2	Elec. Eng. XII ₂ —Assigned Work....	
gineering c.....	[1]	or	
Mech. Eng. XXI—Power Plants.....		Mil. Sci. and Tactics VI ₂ —Theory..	[3]
Mil. Sci. and Tactics I ₇ —Drill.....		Mil. Sci. and Tactics I ₈ —Drill.....	[1]
or		or	
Physical Training.....		Physical Training.....	

CIVIL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading..	1	Physics II ₂ —General.....	4
Physics II ₁ —General.....	4	Physics III ₂ —Laboratory.....	1 $\frac{1}{2}$
Physics III ₁ —Laboratory.....	1 $\frac{1}{2}$	Math. XI—Calculus completed.....	5
Math. X—Calculus.....	5	Mech. Eng. VI ₂ —Mechanical Drawing..	[2]
Civil Eng. I—Surveying.....	1 [2]	Mech. Eng. VII—Machine Shop.....	1 $\frac{1}{2}$
Mech. Eng. VI ₁ —Mechanical Drawing..	[2]	Civil Eng. II—Topographic Surveying..	1 [2]
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Mil. Sci. and Tactics IV ₁ —Theory....	1	Mil. Sci. and Tactics IV ₂ —Theory....	1

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory....	1	Mil. Sci. and Tactics V ₂ —Theory....	3
English IX—Debating.....	5	Civil Eng. III ₂ —Railroad Engineering..	3 [1]
Civil Eng. III ₁ —Railroad Engineering..	2	Civil Eng. V—Roads and Pavements..	1 $\frac{3}{4}$
Civil Eng. IV—Graphic Statics.....	5	Mech. Eng. X ₂ —Applied Mechanics....	3 $\frac{1}{4}$
Mech. Eng. X ₁ —Applied Mechanics....	3	Mech. Eng. XI—Hydraulics.....	1 [1]
Mech. Eng. IX ₁ —Heat Engineering....	[1]	Mech. Eng. XVI—Experimental Engi-	2
Mil. Sci. and Tactics I ₅ —Drill.....		neering b.....	
or		Geology I.....	
Physical Training.....		Mil. Sci. and Tactics I ₆ —Drill.....	[1]
		or	
		Physical Training.....	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics.....	3	Civil Eng. VIII—Bridge Design.....	[3]
English X—Oratorical Writing and Ex- temporaneous Speaking.....	1	Civil Eng. IX—Masonry.....	2 [1]
Mech. Eng. XVII—Experimental En- gineering c.....	2 [1½]	Civil Eng. X—Reinforced Concrete...	2
Civil Eng. VI—Bridge Details.....	[2]	Civil Eng. XII—Water Supply.....	3
Civil Eng. VII—Bridge Analysis.....	2	Civil Eng. XIV—Contracts and Speci- fications.....	2
Civil Eng. XI—Sewerage.....	2	Elec. Eng. IV—Theory of Alternating Currents.....	2
Elec. Eng. I—Theory of Direct Cur- rents.....	3	Civil Eng. XV—Assigned Work.....	2
Civil Eng. XVI—Assigned Work.....	3	or	3
Mil. Sci. and Tactics VI—Drill.....	[1]	Mil. Sci. and Tactics VI ₂	
Mil. Sci. and Tactics I—Drill.....		Mil. Sci. and Tactics I ₂ —Drill.....	
or		or	
Physical Training.....		Physical Training.....	[1]

CHEMICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	German or French—Scientific.....	5
Physics II ₁ —General.....	4	Physics II ₂ —General.....	4
Physics III ₁ —Laboratory.....	[1½]	Physics II ₂ —Laboratory.....	[1½]
Math. X—Calculus.....	5	Math. XI—Calculus.....	5
Chemistry III—Qualitative Analysis...	[3]	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Mech. Eng. VI—Mechanical Drawing...	[2]	Mil. Sci. and Tactics IV ₂ —Theory...	1
Mil. Sci. and Tactics I ₃ —Drill.....	[1]		
Mil. Sci. and Tactics IV ₁ —Theory...	1		

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory...	1	Mil. Sci. and Tactics V ₂ —Theory...	1½
English IX—Debating.....	5	Mech. Eng. X ₂ —Applied Mechanics...	3½
Mech. Eng. XI—Applied Mechanics...	[3]	Mech. Eng. XI—Hydraulics.....	[5]
Chemistry VII—Quantitative Analysis	4	Chemistry VIII—Quantitative Analysis	
Chemistry XVI—Industrial Chemistry	3 [1½]	Chemistry XII—Physical Chemistry alternating with	
Chemistry IV ₂ —Organic Chemistry...	[1]	Chemistry V—Organic Chemistry...	4
Mil. Sci. and Tactics I ₅ —Drill.....		Chemistry VI—Organic Chemistry...	[3]
or		Mil. Sci. and Tactics I ₆ —Drill.....	
Physical Training.....		or	
		Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics.....	3	Chem. XII—Physical Chemistry...	4
English X—Oratorical Writing and Ex- temporaneous Speaking.....	1	or	
Elec. Eng. I—Theory of Direct Cur- rents.....	3	Chem. V—Organic Chemistry.....	3
Mech. Eng. IX ₁ —Heat Engineering...	3	Chem. XX ₂ —Assigned Work.....	
Chem. XVII—Industrial Chemistry...	2 [2]	or	
Chem. XX ₁ —Assigned Work.....	3	Mil. Sci. and Tactics VI ₂ —Theory...	2
or		Chem. XXI ₂ —Reports and Discussions	1½
Mil. Sci. and Tactics VI ₁ —Theory...	[1]	Mech. Eng. IX ₂ —Heat Engineering...	3
Chem. XXI ₁ —Reports and Discussions	2	Mech. Eng. XXVI—Indus. Organiza- tion and Management.....	3
Mil. Sci. and Tactics I ₇ —Drill.....		Mech. Eng. XII—Mechanism.....	3
or		Chem. XXII—Organic and Physical Chemical Laboratory.....	[2]
Physical Training.....		Mil. Sci. and Tactics I ₈ —Drill.....	
		or	
		Physical Training.....	[1]

The Course in Applied Science

This course offers to the student opportunity to prepare either for teaching or for any one of several other distinct vocational pursuits, such as the application of botany, zoölogy, chemistry, and bacteriology to practical industrial problems. In these subjects, as well as in agriculture, the Vocational Science Course makes specialization possible. In addition, the course is so constructed that the student, although specializing, may come in touch with subjects that possess wider cultural significance and insure that broader outlook upon life which should characterize the educated man.

The general plan of the course is to give primarily, a foundation in the sciences of chemistry, physics, and biology; also to give the student an acquaintance with history and literature and an efficient command of good English. The course offers, at the beginning of the Junior year, options in Agriculture, Biology, and Chemistry. One of these the student must select in addition to certain studies required of all. Opportunity either for further specialization within the option, or for gaining a broader training in unrelated studies is afforded thru a limited number of elective subjects.

The nature and aim of these several options are as follows:

THE AGRICULTURAL OPTION

This option combines the broad scientific training of the Applied Science Course with the fundamental subjects given in the Agricultural Course. It thus affords a basis for investigational work in subjects related to agriculture.

With the introduction of agriculture into the secondary and grade schools, there was created a demand for teachers and superintendents who had received, in addition to work in the sciences and education, training in the broad field of agriculture. This option therefore furnishes preparation in those fundamental subjects in Agronomy, Animal Husbandry, and Horticulture which will enable the graduates from this course acceptably to fill positions as instructors and principals of agricultural high schools or as superintendents of schools in rural communities.

THE BIOLOGICAL OPTION

The Biological Option offers training in the applications of biological science to the problems of modern life. The great growth of

agricultural investigation in recent years has created a demand for trained workers in applied biology. In the state experiment stations and the federal government bureaus, opportunities are offered for the investigation of problems in plant physiology and pathology, economic entomology, animal nutrition and animal pathology. State and federal inspection of plants and animals, and the problems of the control of plant and animal diseases offer further opportunities for workers trained in biological subjects. The scope of public hygiene and sanitation is increasing each year and has created a growing demand for trained workers in federal, state, and municipal health service. In addition, such students are well equipped to undertake graduate work in other institutions, or to begin the study of medicine.

THE CHEMICAL OPTION

The subjects in Chemistry are designed to train the student in theoretical and descriptive inorganic and organic chemistry; to give him a working knowledge of the various branches of chemical analysis; and to familiarize him with the practical applications of chemistry. The course is well adapted to prepare students for teaching, for experiment-station work, for graduate work in chemistry, or for positions in industries which involve chemical processes. Such industries include the bleaching and dyeing of cotton, silk and wool, the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, paper, soap, paint and varnish, the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion or by destructive distillation to form gas, coke and tar, embracing the entire field of forest-products industries. In addition the course is intended to prepare particularly for the more specialized chemical industries such as the manufacture of chemicals and the manufacture and application of dyestuffs.

Freshman Year

FIRST TERM		CREDITS	SECOND TERM		CREDITS
English I ₁ —Rhetoric and Composition.		3	English I ₂ —Rhetoric and Composition.		3
German or French.....		3	German or French.....		3
Math. I—Algebra.....		2½	Math. VIIb.....		4
Math. II—Trigonometry.....		2½	Chemistry II—General Chemistry and		
Chemistry I—General.....	2[1½]		Qualitative Analysis.....	3[1½]	
Botany I ₁ —General.....	1[2]		Botany I ₂ —General.....	1[2]	
Freehand Drawing II ₁ —Pencil.....	[1]		Freehand Drawing II ₂ —Pencil.....	[1]	
Mil. Sci. and Tactics I ₁ —Theory....	1		Mil. Sci. and Tactics I ₂ —Theory....	1	
or			Mil. Sci. and Tactics I ₂ —Drill.....		
Home Economics III—Hygiene.....	1		or		
Mil. Sci. and Tactics I ₁ —Drill.....			Physical Training.....	[1]	
or					
Physical Training.....	[1]				

Sophomore Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....	2
English VIII—Interpretive Reading...	1	French or German—Scientific.....	5
Chemistry IV—Organic.....	3 [1]	Geology I.....	2
or		Zoölogy Xb—Anatomy and Physiology	2 [2]
Chemistry III—Qualitative Analysis...	[3]	Physics II ₂ —General.....	4
Botany II—Botany of Crops and Weeds.....	1 [2]	Physics III ₂ —Laboratory.....	[1½]
Zoölogy Xa—General.....	2 [2]	Mil. Sci. and Tactics IV ₂ —Theory.....	1
Physics II ₁ —General.....	4	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Physics III ₁ —Laboratory.....	[1½]	or	
Mil. Sci. and Tactics IV ₁ —Theory.....	1	Physical Training.....	
Mil. Sci. and Tactics I ₃ —Drill.....	[1]		
or			
Physical Training.....			

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		Mil. Sci. and Tactics V ₂ —Theory...	
Mil. Sci. and Tactics V ₁ —Theory.....	1	Psy. and Ed. I—History of Education alternating with	3
English IX—Debating.....	3	Psy. and Ed. III—Rhode Island Education.....	
Psy. and Ed. IV—General Psychology	3	Mil. Sci. and Tactics I ₆ —Drill.....	[1]
alternating with		or	
Psy. and Ed. II—Prin. of Education.....	[1]	Physical Training.....	
Mil. Sci. and Tactics I ₅ —Drill.....		Options: A, B or C. All of the subjects in one of the following groups must be chosen:	
or			
Physical Training.....			
Options: A, B or C. All of the subjects in one of the following groups must be chosen:			
A. Agriculture		A. Agriculture	
Agronomy II—Soils.....	1½ [4]	Agronomy IV—Farm Crops.....	3 [1]
Horticulture I—Propagation of Plants.....	1 [1]	Zoölogy IV—Economic Entomology...	3 [1]
Elective.....	3	Botany IV—Forestry.....	1 [1]
B. Biology		alternating with	
Zoölogy VIII—Histology.....	3	Horticulture IV—Spraying and Pruning.....	3
or		Elective.....	
Agronomy with Plant Breeding.....	1 [4]	B. Biology.	
Botany V—Plant Histology.....	3	Zoölogy VIIIb—Embryology.....	2 [1]
Elective.....		or	
C. Chemistry.		Zoölogy II—Field Zoölogy.....	[1½]
Chemistry VII—Quantative Analysis..	[3]	Zoölogy VIIIb Histology.....	2 [1]
Chemistry IVa—Organic.....	3 [1½]	Botany VI—Plant Pathology.....	1 [4]
Chemistry XVI—Industrial Chemistry.	4	Zoölogy I—Invertebrate Zoölogy.....	1 [3]
		or	
		Chemistry XIX—Physiological Chemistry.....	4
		Elective.....	3
		C. Chemistry.	
		Chemistry VIII—Quantitative Analysis.....	[5]
		Chemistry VI—Organic Laboratory...	[3]
		Chemistry XII—Physical Chemistry alternating with	4
		Chemistry V—Advanced Organic...	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics.....	3	English V—Shakespeare.....	3
English X—Oratorical Writing and Extemporaneous Speaking.....	1	Psy. and Ed. I—History of Edu- cation alternating with.....	3
Psy. and Ed. IV—General Psychol- ogy alternating with.....	3	Psy. and Ed. III—Rhode Island Ed- ucation.....	3
Psy. and Ed. II—Prin. of Education. Mil. Sci. and Tactics VI ₁ —Theory..	3	Mil. Sci. and Tactics I ₃ —Drill.....	3
or.....	3	or.....	3
Elective.....	[1]	Elective.....	[1]
Mil. Sci. and Tactics I ₇ —Drill.....	[1]	Mil. Sci. and Tactics I ₃ —Theory...	[1]
or.....	[1]	or.....	[1]
Physical Training.....	[1]	Physical Training.....	[1]
Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:		Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:	
A. Agriculture.		A. Agriculture.	
An. Hus. XIV—Poultry.....	[2]	Horticulture II—Vegetable Gardening.	2
Horticulture X—Pomology.....	3	Animal Husbandry IV—Breeding....	3
Horticulture XVI—Landscape Garden- ing.....	1 [2]	Animal Husbandry VI—Feeding.....	3
B. Biology.		B. Biology.	
Agronomy XI—Plant Breeding.....	3	Chemistry XIX—Physiological Chemis- try.....	4
or.....	3	or.....	
Zoölogy VIIIA—Histology.....	[3]	Zoölogy I—Invertebrate Zoölogy....	1 [3]
Assigned Biological Work.....	3	Assigned Biological Work.....	3
C. Chemistry.		Zoölogy II—General.....	[1]½
Chemistry XVII—Industrial Chem- istry.....	4	Zoölogy VIIIB—Embryology.....	1 [2]
Chemistry XXI ₁ —Reports and Discus- sions.....	2	C. Chemistry.	
Chemistry XX—Assigned Work.....	3	Chemistry V—Advanced Organic... alternating with.....	4
		Chemistry XII—Physical.....	
		Chemistry XXI ₂ —Reports and Discus- sions.....	3
		Chemistry XXII—Organic and Physi- cal Chemical Laboratory.....	[2]

The Course in Home Economics

The object of the home economics course is to fit young women for home making and to provide adequate training for teaching the various household arts. Nowhere is the application of modern science to everyday life more important than in the home. In no other life-work do women find greater need of scientific knowledge and technical skill than in the intelligent and economic administration of household affairs.

The course includes instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene; and instruction in the care of infants and young children. During the entire course instruction is given in hand sewing, machine practice, and in drafting, cutting, and making garments. Attention is given to planning the wardrobe and remodeling garments. Altho the main work is scientific and technical, the importance of artistic and literary training for home life has not

been neglected. It is recognized that all the knowledge of right living is needed to assist the student to a broader conception of citizenship as well as in performing the manifold duties of daily life.

Opportunities are greater and more varied today for women trained in home economics than for those trained in any other one line. Besides teaching, a profession which is chosen by many, there are excellent openings in institutional management, lunch-room and tea-room work which vary according to the type of institution selected. The demand for hospital dietitians is greater than can be met. There is also a growing demand on the part of the industries for trained women scientists. In view of this demand opportunity to take special courses in chemistry and bacteriology will be offered during the junior and senior years to approved students who wish to fit themselves for such work. Such preparation will qualify the student along the following lines: special research work on problems involving chemistry or bacteriology as applied to food analysis, federal and municipal inspection, analytical work in experiment stations and technical laboratories and chemistry as applied to textile analysis.

Regular students are expected to take the course as outlined below, with choice of electives; but when entered in other courses in the college they may elect certain work in the home economics department, under direction of the head of the department. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English I—Rhetoric and Composition.	3	English I—Rhetoric and Composition.	3
Chemistry I—General Chemistry.	2 [1½]	Chemistry II—General Chemistry and Qualitative Analysis.	3 [1½]
Zoology X—General.	2 [2]	Zoology X—Physiology and Anatomy.	2 [2]
Home Economics III—Hygiene.	1	Drawing XII—Freehand Drawing.	3
Home Economics I—Garment Making.	1 [2½]	Home Economics I—Garment Making.	1 [2½]
Physical Training.	[1]	Physical Training.	[1]
Options: A or B. Both subjects in one of the following groups must be chosen:		<i>Electives*</i>	
A.		English VI—Literature and Composi- tion.	2
Math. III—Algebra.	2½	Music III and IV—Harmony and Appreciation of Music.	3
Math. II—Trigonometry.	2½		
B.			
English VI—Literature and Composi- tion.	2		
Music I and II—Elementary Harmony and History of Music.	3		

* Electives in this term are to be taken only by those students having advance credit.

Sophomore Year

FIRST TERM		SECOND TERM		CREDITS
English II—Newspaper Work.....	1	English III—Argumentation.....		2
German or French.....	3	English VIII—Interpretive Reading.....		1
Chemistry IV—Organic.....	3 [1]	French or German.....		3
Botany I—General.....	1 [2]	Physics I—Descriptive.....		5
History III—Modern European History.....	3	Botany I—General.....		1 [2]
Home Economics IV—Foods.....	[3]	Home Economics IV—Foods.....		[3]
Home Economics XVIII—Dressmaking.....	[2]	Home Economics XXVII—Applied Household Mechanics.....		1 [1]
Physical Training.....	[1]	Physical Training.....		[1]
<i>Elective.</i>		<i>Elective.</i>		
Music.....	2	Music.....		2

Another elective may be substituted if the schedule permits.

Junior Year

FIRST TERM		CREDITS	SECOND TERM		CREDITS
English IV—Modern Essays.....		3	History I—Industrial History.....		3
Psy. and Ed. IV—General Psychology.....		3	Chemistry X—Food Analysis.....	} alternating with	4
Home Economics VIII—Dietetics.....	2 [1]	2	Chemistry XIX—Physiological.....		
Home Economics IX—Sanitation.....		2	Freehand Drawing VIII.....		[2]
Freehand Drawing XI—Design.....	[2]	[1]	Home Economics XVIII—Dressmaking.....		[2]
Physical Training.....	[1]	6	Home Economics VII—House Planning.....		1 [1]
Elective.....			Home Economics XII—Home Nursing and Care of Children.....		2
<i>Electives.</i>			Physical Training.....		[1]
*Bacteriology I—General.....	1 [2]	3	Elective.....		4
Zoölogy VIIa—Histology.....			<i>Electives.</i>		
			*Bacteriology I.....	1 [2]	
			Zoölogy VIIb—Embryology.....		3

Other electives may be substituted for the above if the schedule permits.

Senior Year

FIRST TERM		CREDITS	SECOND TERM		CREDITS
Economics I—Economics.....		3	English V—Shakespeare.....		3
English XI—American Poetry.....		2	Chemistry X—Food Analysis.....	} alternating with	4
Freehand Drawing III—History of Art.....		3	Chemistry XIX—Physiological Chemical.....		
Home Economics XXVI—Textiles and Clothing Economics.....	[2]	[3]	Psy. and Ed. I—History of Education.....		3
Home Economics XXI—Home Administration.....	[3]	[1]	Home Economics VI—Nutrition.....		2 [1]
Physical Training.....	[1]	6	Home Economics XXV—Costume Design.....		[3]
Elective.....			Physical Training.....		[1]
<i>Electives.</i>			Electives.....		[3]
*Bacteriology I—General.....		[4]	<i>Electives.</i>		
or			*Bacteriology I—General.....	1 [2]	
Bacteriology II—Advanced.....	1 [3]		Bacteriology II—Advanced.....		[4]
Vocational Education V—Teaching Home Economics.....	1 [1]		Vocational Education V—Teaching Home Economics.....		1 [1]

Other electives may be substituted if the schedule permits.

*Bacteriology I must be elected in the Junior or Senior year.

The Education Courses

The requirement for entrance to the courses leading to the degree of Bachelor of Education is graduation from an approved Normal School which requires at least two years of professional and academic study and the entrance requirements of which are equal to those of this college.

By arrangement with the State Normal School, graduates of that institution will be enrolled in this course upon the recommendation of the principal of the Normal School. The course is of two years' duration and offers three optional lines of work, viz.: Agriculture, Home Economics and Science. The work is so arranged as to give in the shortest time possible training in the fundamental sciences, together with a comparatively large amount of professional work in the option chosen.

The Agricultural option offers an excellent opportunity to graduates of theological courses and teachers who are planning to take up work in rural communities to broaden their education in such a way as to enable them more completely to understand the problems of those with whom they intend to work.

The Science option gives a comprehensive foundation in Mathematics, Chemistry, Botany, Zoölogy, Physics and Bacteriology, and also gives an opportunity to specialize to some extent in one of these. Those who take this course will be prepared to teach science in the schools of the State.

The Home Economics option offers the fundamental subjects in household arts and the closely allied sciences which will prepare the student to teach these subjects in the schools of Rhode Island.

AGRICULTURE

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Mathematics III—Algebra.....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Mathematics II—Trigonometry.....	2½	Botany I—General.....	1 [2]
Chemistry I—General.....	2 [1]	Animal Husbandry I—Stock Judging.....	[2]
Botany I—General.....	1 [2]	Animal Husbandry III—Breeds.....	2
Botany III—Trees and Shrubs.....	[1]	Horticulture II—Vegetable Gardening.....	2
Agronomy II—Forage Crops.....	2	Horticulture IV—Spraying and Pruning.....	1 [1]
Animal Husbandry XII—Poultry.....	1	Botany III—Trees and Shrubs.....	[1]
Horticulture XVI—Landscape.....	1 [2]	Geology I.....	2
Physical Training.....	[1]	Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Chemistry IV—Organic.....	3[1]	Chemistry XIV—Agricultural Chem- istry.....	3 [1]
Botany II—Crops and Weeds.....	1[2]	Physics I—Descriptive Physics.....	5
Zoology X—General Zoology.....	2[2]	Zoology X—Anatomy and Physiology..	2 [2]
Animal Husbandry VI—Feeds and Feeding.....	3	Agronomy IV—Farm Crops.....	3 [1]
Agronomy III—Soils and Fertilizers...	4 [1½]	Horticulture XVII—Small Fruits.....	2 [1]
Horticulture III—Fruit Culture.....	2	Physical Training.....	[1]
Physical Training.....	[1]		

SCIENCE

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Mathematics I—Algebra.....	2½	Mathematics VIIIA—Analytics.....	4
Mathematics II—Trigonometry.....	2½	or	
Chemistry I—General.....	2 [1½]	Mathematics VIIIB—Analysis.....	5
Botany I—General.....	1 [2]	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Zoology Xa—General Zoology.....	2 [2]	Botany I—General.....	1 [2]
French or German.....	3	Zoology Xb—Anatomy and Physiology..	2 [2]
Freehand Drawing II.....	[1]	Geology I.....	2
Physical Training.....	[1]	Freehand Drawing II.....	[1]
		French or German.....	3
		Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Physics II—General.....	4	Physics II—General.....	4
Physics III—Laboratory.....	[1]	Physics III—Laboratory.....	[1½]
Chemistry IV—Organic.....	3 [1]	Zoology I—Invertebrate Morphology..	1 [3]
or		Botany III—Trees and Shrubs.....	1
Chemistry III—Qualitative.....	[3]	Bacteriology I—General Applied.....	1 [2]
Botany III—Trees and Shrubs.....	[1]	Physical Training.....	[1]
Bacteriology I—General Systematic...	1 [2]	Elective.....	6
Physical Training.....	[1]		
Elective.....	6		

HOME ECONOMICS

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Chemistry I—General.....	2 [1½]	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Zoology X—General.....	2 [2]	Zoology X—Physiology and Anatomy..	2 [2]
Botany I—General Zoology.....	1 [2]	Drawing XII.....	3
Home Economics I—Garment Making...	1 [2½]	Home Economics I—Garment Making...	1 [2½]
Home Economics IV—Foods.....	[3]	Home Economics IV—Foods.....	[3]
Modern History.....	3	Home Economics XXVII—Applied Household Mechanics.....	1 [1]
Physical Training.....	[1]	Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I.....	3	Bacteriology I—General Applied.....	1 [2]
Vocational Ed. V—Home Economics Teaching.....	3	Home Economics VII—House plan- ning.....	1 [1]
Home Economics VIII—Dietetics.....	2 [1]	Home Economics XII—Nursing.....	2
Home Economics IX—Sanitation.....	2	Home Economics XVIII—Dressmak- ing.....	[2]
Home Economics XVIII—Dressmak- ing.....	[2]	Home Economics XXI—Home Ad- ministration.....	1 [3]
Chemistry IV—Organic.....	3 [1]	Zoology VIIIB—Embryology.....	3
Bacteriology I—General Systematic...	1 [2]	Physical Training.....	[1]
Physical Training.....	[1]	Elective.....	3

Teacher Training Courses in Vocational Education

A law passed by the sixty-fourth Congress and signed by the President, February 23, 1917, provides for coöperation between the Federal Government and the several States in the advancement of vocational education in the fields of agriculture, home economics, and trades and industries. In order to receive the benefits of this law, which is known as the Smith-Hughes Act, it is necessary that the State shall, through the legislative authority thereof, accept the provisions of the Act and create or designate a State Board for Vocational Education, who shall have charge of the administration of this act. Under the supervision of the State Board, there shall be established vocational courses of less than collegiate grade for persons over fourteen years of age who have entered or are preparing to enter upon the line of vocational work in which they desire to receive instruction.

The Act also establishes a fund which shall be used for training of teachers, supervisors and directors of the vocational work. In order to carry out the provisions of the Act in so far as the training of teachers in agriculture and home economics is concerned, an agreement has been entered into between the State Board for Vocational Education and the Board of Managers of the Rhode Island State College, whereby the teacher training courses for Agriculture and Home Economics shall be given at the college.

The courses as outlined are of four years' duration and upon completion, the graduates therefrom receive the Bachelor of Science degree. Requirements for entrance to these courses are the same as to the other four-year degree courses. (See pp. 34-41).

According to a ruling of the Federal Board for Vocational Education, it will be necessary for all candidates for positions as teachers, supervisors or directors of vocational work to have had a certain amount of practical experience in the line of work in which a position is sought before such position can be obtained.

Agriculture

For the Freshman and Sophomore years the course is the same as the Agricultural Course, pp. 17-18.

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IX—Debating.....	1	History I—Industrial History.....	3
Animal Husbandry X—Veterinary Practice.....	3	Agronomy IV—Farm Crops.....	3 [1]
Animal Husbandry XII—Poultry Culture.....	1	Agronomy VII—Farm Management...	2
Agronomy III—Soils and Fertilizers... 4 [1½]	2	Psy. and Ed. I—History of Education...	2
Horticulture III—Fruit Culture.....	2	Vocational Ed. I—History of Agri.Ed.	1
Horticulture XVI—Landscape Gardening.....	1 [2]	Animal Husbandry VII—Dairy Practice.....	1 [2]
Psy. and Ed. IV—General Psychology.....	3	Agronomy VI—Farm Machinery.....	2 [1]
Physical Training.....	[1]	Horticulture XVII—Small Fruits.....	2 [1]
		Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English X—Oratorical Writing and Extemporaneous Speaking.....	1	Psy. and Ed. III—Rhode Island Education.....	3
Economics I—Economics.....	3	Agronomy X—Agricultural Experimentation.....	3
Psy. and Ed. II—Principles of Education.....	3	Vocational Ed. III—Practice Teaching...	3
Animal Husbandry VI—Feeds and Feeding.....	3	Vocational Ed. IV—Special Methods in Agriculture.....	3
Agronomy XII—Farm Accounts..... 1 [1]	3	*Agriculture and Science elective.....	7
Vocational Ed. II—Practice Teaching..	5	Physical Training.....	[1]
*Agriculture and Science elective.....	[1]		

* The electives may be taken in any division of agriculture or in the Botanical or Zoölogical department.

Teacher Training Course in Home Economics

Freshman Year

Same as Home Economics Course, freshman year, page 27.

Sophomore Year

Same as Home Economics Course, sophomore year, page 28.

Junior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
English IV—Modern Essays.....	3	History I—Industrial History.....	3
Psy. and Ed. IV—General Psychology..	3	Chemistry X—Food Analysis.....	4
Home Economics VIII—Dietetics....	2 [1]	alternating with.....	
Home Economics IX—Sanitation.....	2	Chemistry XIX—Physiological....	[2]
Freehand XI—Design.....	[2]	Freehand Drawing VIII.....	
Physical Training.....	[1]	Home Economics XVIII—Dressmak- ing.....	[2]
Electives.....	6	Home Economics VII—House Plan- ning.....	1 [1]
Bacteriology I—General Systematic..	1 [2]	Home Economics XII—Home Nursing and Care of Children.....	2
Zoölogy VIIa—Histology.....	3	Psy. and Ed. I—History of Education.	3
Other electives may be substituted if the schedule permits.		Physical Training.....	[1]
Bacteriology I must be elected in the Junior or Senior year.		Elective.....	2
		Any second-term elective offered in the Home Economics Course.	

Senior Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Economics I—Economics.....	3	English V—Shakespeare.....	3
English XI—American Poetry.....	2	Chemistry X—Food Analysis.....	4
Freehand Drawing III—History of Art.....	3	alternating with.....	
Home Economics XXVI—Textiles and Clothing Economics.....	[2]	Chemistry XIX—Physiological Chem- istry.....	4
Home Economics XXI—Home Ad- ministration.....	[3]	Psy. and Ed. III—Secondary Educa- tion.....	3
Psy. and Ed. II—Principles of Educa- tion.....	3	Vocational Education V—Teaching Home Economics.....	1 [1]
Vocational Education V—Teaching Home Economics.....	1 [1]	Home Economics VI—Nutrition.....	2 [1]
Physical Training.....	[1]	Home Economics XXV—Costume Design.....	[3]
		Physical Training.....	[1]

II. SHORT COURSE IN AGRICULTURE

To meet the needs of those who find it out of their power to undertake a four years' college course, but who, nevertheless, desire to increase their efficiency on the farm, the college offers what is known as a short course in agriculture. Students may with advantage take only a part of the course if unable to remain for the whole time.

It is required of applicants for this course that they be at least eighteen years of age at entrance, that they shall have completed at least the common school, that they shall have a definite purpose in mind in applying for the course, and *that within three weeks after entrance they shall satisfy their teachers that they are sufficiently mature, sufficiently earnest, and sufficiently capable to warrant their remaining for the course.* Every effort will be made to guard this course from

becoming a refuge for the idle, the purposeless, and therefore the unsuccessful, and to that end drastic measures of elimination will be used whenever necessary, but especially at the end of the first three weeks of the year.

The course is in no case supposed to serve as a substitute for the regular work of the college either in character or in scope of the subject-matter presented, and does not lead, directly or indirectly, to a degree, a certificate only being granted. Neither is it to be considered as preparatory to the college work. Its particular function is to give, in the shortest, most direct way possible, certain definite, specific, and perhaps uncorrelated information which will be of immediate value on the farm.

In order that seriousness of purpose as regards an agricultural occupation may be assured from those taking the agricultural short course, no student will be permitted to register for the second year's work who has not had at least six months' practical experience on a farm. This experience should be obtained upon a farm making a specialty of the line of work which the student intends to follow.

Requirements for Admission to the Degree Courses

UNITS

The requirements for admission are reckoned in units. A "unit" represents the successful completion of a year's study of a subject, to which have been devoted not less than one hundred and twenty recitation periods of sixty minutes each, or their equivalent (*e. g.*, one hundred and eighty periods of forty minutes each). Fourteen units are required. A student may obtain this amount of entrance credit from high-school work or from examination.

GROUPS

The entrance subjects are divided into two groups, A and B. Those in A, unless otherwise indicated, are required of all candidates for admission. Candidates who have not studied algebra the past year are urged to review the subject during the summer before entering college. Observance of this warning will prevent many failures in college work.

GROUP A

The school year is reckoned at thirty-six weeks, the minimum length.

English.....	108 weeks.....	3 units.
Modern Language—other than English . . .	72 weeks.....	2 units.
Algebra—for engineering and applied science students, 54 weeks.	1 ½ units.	
Algebra—for agricultural and home economics students, 36 weeks.	1 unit.	
Geometry, Plane.....	36 weeks.....	1 unit.
Geometry, Solid—for engineering students only, 18 weeks.....	½ unit.	
Physics.....	36 weeks.....	1 unit.
History.....	36 weeks.....	1 unit.

The remainder of the fourteen units must be taken from

GROUP B *

No subject is accepted for more than the amount here stated or for less than one-half of a unit.

Foreign Language.....	216 weeks.....	6 units.
Geometry, Solid—for other than engineering students, 18 weeks.	½ unit.	
Botany.....	36 weeks.....	1 unit.
Algebra—for students in agriculture and home economics, 18 weeks.	½ unit.	
Chemistry.....	36 weeks.....	1 unit.
Geology.....	18 weeks.....	½ unit.
Physiography.....	36 weeks.....	1 unit.
Physiology.....	18 weeks.....	½ unit.
History.....	108 weeks.....	3 unit.
Drawing.....	36 weeks.....	1 unit.
Domestic Science.....	18 weeks.....	½ unit.
Shop Practice.....	18 weeks.....	½ unit.
Farm Practice.....	18 weeks.....	½ unit.

REGISTRATION

Registration occurs on the first day of each term, from 9 A. M. to 12 M., and from 1 P. M. to 4 P. M. A special fee of one dollar will be charged for registration after the first day of each term.

Each student is required to sign the following form of application before registering for the current year:

I hereby make application for registration as a student in Rhode Island State College for the year. In consideration of such registration and the attendance consequent thereupon, I hereby engage

* Other subjects not here named will receive due consideration if presented on the application blank, with a statement of the work done.

and obligate myself cheerfully to observe and conform to the rules of said college, having specifically in mind, without excluding others, that in relation to hazing and class disturbances. I further engage promptly and on my own motion to withdraw from the college whenever I find myself unable or unwilling to carry out the obligation herein assumed.

METHODS OF ADMISSION

On any or all of the subjects named in both groups, satisfactory standings from any reputable high school will be accepted in lieu of examination, on presentation of a copy of the student's full record in the high school showing clearly the nature of the work pursued in each subject, time devoted to it, and grade of work done. This copy must be duly signed by the proper official of the school, and must be accompanied by a certificate of good moral character. The latter, however, may be from any reputable source. On application, blanks showing definitely the full nature of the information desired from the high school will be furnished.

Candidates not presenting satisfactory standings from reputable high schools will be examined, over ground corresponding to the number of units attached, on all the subjects of Group A and on such of Group B as they may offer. Examinations for entrance will be held at the opening of the college year in September, as announced in the calendar, page 8.

SPECIFICATIONS OF GROUND TO BE COVERED*

GROUP A

These subjects, with the exception stated, are required of all students to the extent indicated by the number of units designated in each case.

Languages

ENGLISH, 3 UNITS.—In English two aims are sought: first, a knowledge of the language—including the acquisition of an ample vocabulary and power of effect-

* For any or all of the subjects described below the requirements of the College Entrance Examination Board, upon which these specifications are largely based, will be accepted. A circular stating these requirements in detail and blank forms of application for examination may be obtained by sending ten cents in stamps to the College Entrance Examination Board, Post Office Sub-Station 84, New York City.

ive expression—second, some acquaintance with the literature. To attain the first, grammar and composition must be thoroly studied. Thruout the secondary-school course there should be much practice in writing along a variety of lines suggested by the pupil's experience, his general interests, and studies other than English. Spelling, punctuation, accuracy of idiom, should receive due attention in all written work; while correct and forceful oral expression should also be insisted upon.

To meet the requirement in literature certain selections are to be made from two lists of works—one for reading, the other for closer study. It is hoped to foster in this way a taste for good books and an intelligent appreciation of them. Committing to memory selected passages and reading aloud are strongly urged. In all cases some knowledge of the author's life and his place in literature should be acquired, while a more exacting study of selected texts would lay emphasis of form and style, meaning of particular words and phrases, and the significance of allusions. The list of books prescribed for 1919-20 may be obtained from the nearest high-school principal.

ELEMENTARY GERMAN, 2 UNITS.—During the first year the work should consist of drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. During the second year the course should be a continuation of the first as regards grammar, composition, and conversation. The reading should consist of at least 200 pages of such texts as Arnold's *Fritz auf Ferein*, Wildenbruch's *Das Edle Blut*, Mosher's *Wilkommen in Deutschland* and Benedix' *Der Prozess*.

ELEMENTARY FRENCH, 2 UNITS.—The course in French should parallel that in German. During the first year there should be drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. Thruout the second year the course should be a continuation of the first as regards grammar, composition, and conversation. At least 250 pages of such texts as Bruno's *Le Tour de la France*, Malot's *Sans Famille*, Mérimée's *Colomba*, Sarcey's *Le Siège de Paris*, and Hugo's *La Chute* should be read.

Mathematics

ALGEBRA, 1½ UNITS.—The requirement in algebra comprises the four fundamental operations; factoring; highest common factor and lowest common multiple; fractions; linear equations; exponents; radicals; quadratic equations; simultaneous equations involving quadratics; binomial theorem for positive integral exponents. Problems should be given at frequent intervals. Candidate for the courses in Agriculture and Home Economics are required to offer but one unit for this work.

PLANE GEOMETRY, 1 UNIT.—This requirement is met by the usual theorems and constructions of standard text-books, numerous originals, and applications.

SOLID GEOMETRY, ½ UNIT.—The ground is covered by the usual theorems and onstructions of standard text-books, originals, and applications.

Science

PHYSICS, 1 UNIT.—This course should consist of class-room work based on a standard text-book, accompanied by lecture-table demonstrations and by numerous practical problems. A parallel course in individual laboratory work is desirable, but is not absolutely required. In the case of laboratory work, one hour of credit will be allowed for each two hours spent in the laboratory.

History, 1 unit

The requirement in history will be met by presenting any one of the following subjects: ancient history, especially Greek and Roman, with the chief events of the early Middle Ages to the death of Charlemagne (814); medieval and modern European history from 814 to the present time; English history; American history and civil government.

GROUP B

From this group units are to be taken, in addition to those of Group A, sufficient to make up the whole number required. Any combination of units, including fractions not less than one-half, will be allowed.

Languages

GERMAN, 2 UNITS.—The requirement for Elementary German is indicated under Group A. One unit will also be allowed for third and one for fourth year work. Third-year study should emphasize reading and advanced composition. Suitable texts are Riehl's *Der Fluch der Schönheit*, Freytag's *Bilder aus der deutschen Vergangenheit*, Lessing's *Minna von Barnhelm*, Schiller's *Wilhelm Tell*, and Heine's *Die Harzreise*. The fourth year's work should mark a decided advance in the mastery of vocabulary and idioms shown both in speaking and writing. The works may be made the basis for themes. The following reading matter is suggested: Freytag's *Soll und Haben*, Fulda's *Der Talisman*, Hauff's *Lichtenstein*, Scheffel's *Ekkehard*, Schiller's *Wallenstein*, *Maria Stuart*, or *Geschichte des dreissigjährigen Krieges* (Book III), Dahn's *Ein Kampf um Rom*, Goethe's *Dichtung und Wahrheit* (Books I-IV).¹

FRENCH, 2 UNITS.—The requirement for Elementary French is indicated under Group A. One unit will also be allowed for second and one each for third and fourth year work. In third year emphasis should be laid on reading. Some time ought also to be given to advanced composition. Among suitable texts may be mentioned Racine's *Athalie*, Corneille's *Le Cid*, Molière's *Le Bourgeois Gentilhomme*, Sandeau's *Mademoiselle de la Seiglière*, Vigny's *La Canne de Jonc*. From the fourth year's study increased facility in conversation and composition should be gained, and any modern French, other than technical, should be read with ease. Such texts as the following are recommended: the prose works of Dumas père, Hugo's *Ruy Blas*, La Fontaine's *Fables*, Sainge-Beuve's *Essays*, Taine's *Origines de la France Contemporaine*, Pellissier's *Movement Littéraire au XIX Siècle*. At least 600 pages should be read.

LATIN, 1 TO 4 UNITS.—A credit of one unit will be given for each year's work in Latin, covering in all a standard beginner's book, four books of Cæsar's Gallic War, six orations of Cicero and six books of Virgil's *Æneid*. It is expected that work in prose composition and sight reading will be included in each subject.

Mathematics

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—See Group A for other than engineering students.

Science

BOTANY, 1 UNIT.—The preparation in Botany should include individual laboratory work recorded by notes and diagrammatic drawings. Field work is desirable, and should also be accompanied by notes. The notebook and drawings certified by the teacher should be presented at the time of application for entrance credit. The year's course of study should consist of three parts, viz.: 1. The general principles of the anatomy, morphology, physiology, and ecology of seed plants. 2. The natural history of the plant groups. The structure, reproduction, and adaptations to habitat of one or two types from each group should be studied. 3. Classification. A brief study of the subdivisions of the above groups. Ability to determine species of flowering plants is not essential. Any standard text-book covering the above field may be used.

CHEMISTRY, 1 UNIT.—An elementary text-book, such as William's *Elements of Chemistry*, or *First Principles of Chemistry*, by Brownlee and others, should be covered by recitations. At least one exercise per week must be devoted to individual work in the laboratory. The pupil must perform forty or more experiments, such as are described in the Report of the College Entrance Examination Board, 1919, and keep a notebook in which he describes the apparatus used, records the phenomena observed, and states the conclusions in his own words, in each experiment.

GEOLOGY, $\frac{1}{2}$ UNIT.—In Geology, a study of the following subjects should be made: rock-forming minerals, their names and chemical constituents; earthquakes—their cause and effects; volcanoes—distribution, types, character of eruption, nature of erupted material; supposed physical state of the earth's interior; surface agencies destructive to rocks, with brief illustrations; processes of re-construction, with illustrations; rocks—classification, according to origin, rock fracture and dislocation, rock structure due to erosion, metamorphic rocks, mineral veins and their method of formation; conditions determining land sculpture; the geological periods, with land elevations, and the characteristics of climate, plant and animal life of each period.

PHYSIOGRAPHY, 1 UNIT.—This course should include a consideration of the earth as a globe, the atmosphere, the waters of the earth, the lands, life upon the earth, and the reactions between these elements. Special attention should be given to the questions of climate, the winds, the weather, tides, ocean currents, and to the effect of the ocean in modifying climatic conditions. Attention should be directed to the manner in which the land was originally formed and to the way in which the original formation has been and is being modified by the action of erosion, the winds, and frost. Thruout the course consideration should be

given to the manner in which the various physical characteristics of the earth have affected life upon its surface.

PHYSIOLOGY, $\frac{1}{2}$ UNIT.—The text-book work should cover material equivalent to that of Martin's Human Body or Hough and Sedgwick's Human Mechanism. In addition the applicant should present a notebook, showing laboratory work on the elementary physiological processes and general structure of mammals.

ZOOLOGY, 1 UNIT.—The work should include: 1. The general natural history of a number of common vertebrates and invertebrates of the locality where the work is given. 2. The classification of these forms into phylum, class and order, with the characteristics of the several groups. 3. The main anatomical features of one vertebrate, two arthropods (one an insect); an annelid, preferably the earthworm, a coelenterate, two protozoans (*Amœba* and *Paramœcium* recommended). 4. The general physiology of the above types involving digestion, absorption, circulation, excretion, and nerve function. These should be compared with the same functions in the human body. 5. The following subjects should be brought before the student in connection with the foregoing studies: asexual and sexual reproduction, alternation of generations, regeneration, fertilization and segmentation of egg cells, adaptation, variations, evidences of relationship between similar groups, and the cell structure of animals.

Certified notebooks must be presented, which include notes upon work and discussion in class-room and drawings of the forms dissected.

History, 1 unit

See Group A.

Drawing, 1 unit

This may be either freehand or mechanical. If freehand drawing is offered, the candidate should submit at least fifteen drawings, the majority to be in pencil, certified as his work by the instructor. These should show ability to sketch from various objects with considerable accuracy of proportion and clearness of line, and a fair understanding of the rules of perspective and light and shade as applied in freehand sketching. A candidate may also present the equivalent of five hours per week for one year in elementary mechanical drawing, lettering, or sketching from models.

Domestic Science, 1 unit

In domestic science the student must present satisfactory evidence of knowledge in the following subjects: the use and care of the kitchen equipment, general cleaning processes, the marketable forms of staple foods. She must also show credit for at least twelve cooking laboratory lessons of two hours each.

Shop Practice, 1-2 unit

The candidate may offer carpentry or any of the various forms of bench-work given in a well-equipped manual training school, equivalent to five hours per week for one-half year.

Farm Practice, 1-2 unit

By "farm practice" is meant familiarity with the operations of the farm, such as the harnessing of teams, the use of tillage implements, and the care of dairy animals.

Degrees

The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 17-33. The degree of Bachelor of Education is conferred upon a student who has completed one of the educational courses outlined on pages 29-30. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satisfactory thesis in applied or economic science, and upon passing examinations in the subjects pursued. Candidates not graduates of this college must file with the committee on graduate study, not later than October first, a detailed statement of their previous work, certified by the proper authorities. They must select, not later than November fifteenth, a major and a minor subject which must be closely related and have the approval of the committee on graduate study and of the professor in whose department the principal work is done. Major subjects may be selected in any of the following departments: agriculture; botany; chemistry; zoölogy; bacteriology; home economics; electrical, mechanical and civil engineering. The minor may be selected from undergraduate subjects outlined in the catalog; the major, however, must be advanced work specially arranged with the individual professor. The thesis must be typewritten, upon paper of the size and quality prescribed, and two copies must be in the hands of the president not later than June first.

The requirements for the degree of Mechanical Engineer, Electrical Engineer, or Civil Engineer, consist of three years of successful professional practice, subsequent to the Bachelor's degree, one of which must have been in a responsible position; the presentation of an acceptable thesis; and the passing of examinations upon the investigations involved in the thesis. The requisites for the degree of Master of Agriculture are the same as for the engineering degrees, except that five years of professional practice are required.

A fee of five dollars is charged for registration for an advance degree. Students from outside the state pay a tuition fee of fifty

dollars during the year of residence. The cost of a diploma is five dollars.

Teachers' Certificates

The following resolution adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island College will be received as evidence of the required qualifications in scholastic subjects for a teacher's certificate of the first grade."

Rhode Island State College also offers professional courses in all subjects required by the State Board of Education for a first grade teacher's certificate, and graduates of the college who have completed all the subjects in Psychology and Education will be accredited in full for a teacher's certificate of the highest rank.

By action of the Regents of the State of New York, taken June 9, 1910, the degrees of B. S. and M. S. from this college are accepted as a basis for the issuance of licenses to teach in that state.

Reserve Officers' Training Corps

A new feature of the college work is the establishment of a Coast Artillery unit of the Reserve Officers' Training Corps, in connection with the Military Department. The details of the subject will be found on pages 83-87 of this catalog.

There is an increasing demand thruout the country for teachers of high-school grade who are able to give military instruction, so that students of Applied Science who can take the military training prescribed for the Officers' Reserve Corps will be adding an important asset to their professional equipment.

Expenses

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is \$25.00 a term, or \$50.00 a year. Students who apply for admission as non-residents will be expected to pay tuition thruout their course unless there is a bona-fide change of residence of the parent or guardian.

The regular college expenses are tabulated as follows:

Board, \$5.00 per week (subject to change without notice)	\$180 00
Room-rent, including heat and light	40 00
Incidental fee, \$5.00 per term	10 00
Student tax for Beacon, outside lectures, athletics, etc.	10 00
Laboratory expense, \$5.00 per term, estimated	10 00
	<hr/>
	\$250 00

The first four items must be paid quarterly in advance; that is to say, from boarding students, \$60.00 will be required at the opening of the year, September 15, 1919, and on November 17, 1919; also at the opening of the second term in February, and again at the beginning of the fourth quarter. Non-residents of the state should add to this sum \$12.50 for tuition each quarter. Day students will be required to make a deposit of \$5.00 for laboratory expense together with the incidental fee and student tax, making a quarterly payment of \$10.00 in advance on the above dates. In order to secure dormitory accommodations, the student is required to deposit \$10.00 with the application, the amount to be credited on the room rent for the first quarter. If the student fails to take the room, the deposit is forfeited. During vacations dormitories and fraternity houses will not be open for occupancy except under special arrangements with the college office. In such case, a higher rate for room rent will be charged, such rate to be adjusted on individual application. The item of laboratory expense includes all material used in the various laboratories, and the destruction, breakage, or marring of apparatus and tools, and must be paid when bill is presented at the close of each term.

The probable cost of books will be from \$30.00 to \$50.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from \$10.00 to \$25.00. A fee of 50 cents will be charged for each second examination to make up a condition. Graduates pay the cost of diplomas, \$5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter.

UNIFORM.—The following articles of uniform clothing will be issued by the Quartermaster Corps of the army, free of charge, to each student in the Reserve Officers' Training Corps: 1 coat, wool, O. D., 1 breeches, wool, O. D., 1 pair shoes, russet or marching, 1 shirt, wool, O. D., 1 overcoat, 1 pair leggins, canvas, 1 hat, 2 collar ornaments, 1 hat cord, and 1 belt. This uniform must be worn during all military instruction, and may be worn at other times as desired. Articles lost or unnecessarily worn or damaged must be replaced by the student at his own expense. Seniors and juniors taking drill as an optional subject, but not enrolled in the R. O. T. C., will be required to purchase a suitable uniform to be worn during all practical exercises.

TRANSPORTATION.—The college conveys day-students to and from the railroad station free of charge. Once at the beginning and end of each term, trunks will be conveyed to and from the station for students living in dormitories under college control.

BOARDING STUDENTS.—The deposit for board for 1919-20 is at present fixed at \$5.00 per week. At the end of each term, the student will be charged, pro rata, the cost of board in excess of deposit or, if the cost falls below deposit a rebate will be allowed. Owing to the uncertainty of prices for all forms of provisions and labor, the right is reserved to make change in the rate of board at such times as may appear necessary to do so. It is, however, guaranteed that board will be furnished students at cost. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the use of such ticket. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance.

CASES OF ILLNESS.—Arrangements for ascertaining and handling cases of illness are as follows: Each floor of the dormitory and each house has a student officer, called a monitor, appointed and paid by the college. A part of his duties is to report cases of illness. The room-mate also reports such illness to the student head-waiter in the dining room, who sends the meal to the room and reports his action to the registrar. This official notifies the office, where such action is taken in consultation with the college physician as seems

advisable. A small hospital room is maintained, to which a patient may be moved, and in which he may have entire quiet and such care and attention as may be required.

MEDICAL SERVICE.—Because of the necessity for systematic medical supervision of the students, a college physician has been appointed. An effort has been made to model the service after that of the most progressive universities, with certain modifications to fit local needs. Here at Kingston, the work comes at present under three heads: 1. The care of the sick. 2. A systematic examination of students with a view to giving any needed advice, and the keeping of permanent records of their condition. 3. The making of examinations for different branches of the Government service.

DORMITORIES FOR MEN.—East Hall affords excellent accommodations for men students. The two upper floors are entirely devoted to rooms for students. The sanitary conveniences on each floor are ample, including a full complement of shower baths. The first floor contains a social room for the men, two dining-rooms with capacity for one hundred and fifty students each, and a kitchen with good equipment.

Some of the college fraternities have erected buildings of their own, while others occupy houses rented by the college in the village of Kingston nearby.

DORMITORIES FOR WOMEN.—The college maintains two dormitories for women, Davis Hall and South Hall, accommodating about fifty students. Each dormitory is supervised by a faculty member and every possible care is taken to guard the health and safety of the young women. Much attention is given to the social life among them. The dining-room for the women is in South Hall.

FURNITURE.—The rooms in the women's dormitory are provided with necessary furniture, including mattresses, but no other bedding material. *All students in the men's dormitories are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from \$8.00 to \$10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold when the student leaves, for one-half to three-fourths the original price. All students should bring with them such articles as sheets, blankets, pillow, pillow-slips (all for single bed), and towels. Men students are required to purchase mattresses at the college.

ROOMS IN THE VILLAGE.—Furnished rooms in private houses for students who occupy them thruout the college year range from \$1.25 to \$2.50 per week. Arrangements for such rooms should be made by the individual, who may procure lists of available rooms at the college office.

COLLEGE STORE.—Students will be required to pay cash at the store for all books and other supplies.

DAMAGE FUND.—All damage not due to ordinary wear will be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.
2. Students found guilty of such damage, but not acknowledging and settling for the damage will be charged double the cost of repair.
3. Students will be responsible for damage in their own rooms. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Religious Influences

This college is a state institution, and consequently, the widest latitude is given to all creeds and forms of religious belief. Simple assembly exercises are held on one day of each week and are conducted by the president or some other member of the faculty. It is required that students attend assembly.

A branch of the Intercollegiate Young Men's Christian Association is doing active work among the men students, holding a meeting weekly thruout the year. This association conducts courses in Bible study, and is taking the lead in endeavoring to establish sound and high ideals of college life.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and if possible to join its membership. Churches of various denominations in Wakefield, four miles distant, welcome our students. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

The College Lecture Association

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to introduce talented speakers upon subjects both entertaining and instructive. The association may be looked upon as a permanent and important factor in college activities.

Equipment

FARM AND CAMPUS.—The landed property of the college has a total area of 170 acres. About forty-one acres of this area are devoted to buildings, lawns, and athletic grounds; nine acres are in forest; and six are being developed as an arboretum. Thirty-five acres are used for the field investigations of the experiment station, which are valuable object lessons in agricultural instruction. The remainder is used for garden and orchard, and for raising crops for the live stock. The total value of land, buildings, and equipment is over \$500,000.

AGRICULTURAL BUILDINGS.—The agricultural buildings consist of a commodious dairy barn with laboratories for instruction in farm dairying and milk testing; a horse barn of modern construction; a greenhouse with an area of 10,000 square feet; a building attached to the greenhouse for class work in agronomy and horticulture, and a group of buildings used for instruction and experimentation in poultry raising.

ENGINEERING BUILDINGS.—The engineering department is equipped with modern machine, forge, and pattern-making shops, located in a building known as Ladd Laboratory. In Lippitt Hall, a granite building, 134 by 40 feet, are housed the lecture rooms, drawing rooms, testing rooms, and engineering laboratories of the department. A boiler house and a dynamo room, from which heat, power, and light are furnished for the various buildings, are a part of the engineering outfit for practical instruction and for experimentation in electrical and steam engineering.

SCIENCE HALL.—This building was first occupied in October, 1913. It consists of three stories and a basement, measures 154 by 60 feet, and is built of native granite. Here are housed the departments of chemistry, physics, zoölogy, bacteriology, and botany. Each department is provided with commodious laboratories, recita-

tion room, and department library room. An amphitheatre having a seating capacity of 150 and provided with suitable projection apparatus, serves for the common use of the various departments requiring such a room.

HOME ECONOMICS LABORATORIES.—The special laboratories of this department are located in Davis Hall and in a small building near it.

TAFT LABORATORY.—The laboratories and offices of the experiment station are housed in a granite building known as Taft Laboratory.

DRILL HALL AND ATHLETIC HOUSE.—The drill hall, a room 134 by 40 feet, located in Lippitt Hall, is used both as an armory and as a gymnasium. A dressing room and bath room are attached to the hall. An athletic house provided with bath and dressing rooms for out-of-door sports is located at the athletic field, which is equipped with cinder track and straightaway for track athletics. Tennis courts for both men and women are also provided.

The Library

The library occupies two large adjoining rooms in Lippitt Hall and numbers over seventeen thousand volumes. The books are arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a card catalog gives author, title, and subject entries. As the library has been from the first intended for reference work, the various departments of instruction have made their selections with the greatest care. In the reading-room, one hundred and twenty of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

Since the library has been a government depository twenty-five hundred books and pamphlets have been received, which are of value in scientific investigation and research.

The library is open every week day from 8:00 A. M. to 6:00 P. M., with the exception of an hour at noon. The librarian or his representative is in constant attendance, to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the State are at liberty to use the library.

Location

The college campus is one and one-half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. The ride from Providence is about forty to forty-five minutes in length. From New York the time is some four hours.

Telephone Calls

The college office cannot undertake to call students to the telephone. Messages will be taken to be delivered to students as soon as practicable. Men students boarding at the college may be reached over the pay-station telephone at East Hall, Narragansett Pier 20259-J at 7:00 to 7:30 A. M., 12:00 to 12:30 P. M., and 6:00 to 6:30 P. M. Women students may be reached over the pay-station telephone at Davis Hall 20259-W, at 7:30-8:00 A. M., 12:30-1:00 P. M., and 6:30-7:30 P. M.

DEPARTMENTS OF INSTRUCTION

The following subjects are offered in the different departments. All subjects in the departments of instruction preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture

PROFESSOR ADAMS, PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK,
MR. RIMOLDI, MR. BRETT, MR. SCOTT

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work outlined above, all students registered for a degree in agriculture will be required to show certain familiarity with the ordinary operations of the farm, before such degree is given.

In order that those students who have not had an opportunity to receive training in the practical work of the farm may become familiar with some of the more common operations, they will be required, during their connection with the college, to do a certain amount of routine farm work without pay. This will include work in the dairy barn, poultry yard, greenhouses and gardens. This training will be in addition to the laboratory credits prescribed in the regular course. The amount of such work required will depend upon the efficiency shown by the student. No college credits will be given for this work, yet the neglect of this phase of the training may be considered a sufficient cause for dismissal from the institution. Students taking practical work upon farms during the summer vacations will be required to furnish a certificate from their

employers, stating the time spent on the farm and the kind and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is to elect during the Senior year.

AGRONOMY

PROFESSOR ADAMS, ASSISTANT PROFESSOR BURDICK

The instruction in agronomy begins the first term of the Sophomore year, when a study is made of the forage plants. Following this work are subjects dealing with the other field crops and their uses as food for man and beast. In the work with soils and fertilizers, especial emphasis is placed upon the problems connected with the proper use of chemical manures.

The business side of farm life is given attention in the subject treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment station, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery.

Students have the advantage of the field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects

II. Forage Crops.—History and development of the plants used for forage silage, methods of construction of silos. *Two recitation credits, first term. Required of Sophomores in Agriculture and of first-year students in Education Course, Agricultural option.*

III. Soils and Fertilizers.—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Four recitations and one and one-half laboratory credits, first term. Required of Juniors in Agriculture in Education Course, Agricultural option; option for Juniors in Applied Science. Prerequisite: Chemistry I and II.*

IV. Farm Crops.—Origin and history; production and place in the rotation of clovers, grasses, and root crops. *Three recitation credits and one laboratory credit, second term. Required of Juniors in Agriculture and in Teacher-Training Course in Agriculture; and of second-year students in Education Course, Agricultural option. Option for Juniors in Applied Science. Prerequisite: Botany I and II.*

VI. Farm Machinery.—Development of farm machinery, methods of construction, function, and operation. *Two recitation credits and one laboratory credit, second term. Required of Juniors in Teacher-Training Course in Agriculture, second term. Option for Juniors in Agriculture.*

VII. Farm Management.—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming accounts. *Two recitation credits, second term. Required of Juniors in Agriculture. and in Teacher-Training Course in Agriculture. Prerequisite: Agronomy III and IV.*

VIII. Farm Management (Advanced).—Individual problems of farm management are assigned. Field trips are made for studying different types of farming. Problems in planning cropping systems and other management work. There will be at least two one-day field trips. *One recitation and two laboratory credits, second term. Elective for Seniors in Agriculture.*

IX. Literature.—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports on special topics. *Two recitation credits, second term. Elective for Seniors in Agriculture.*

X. Agricultural Experimentation.—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits, second term. Required of Seniors in Agriculture, and in Teacher-Training Course in Agriculture.*

XI. Plant Breeding.—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Three recitation credits, first term. Required of Seniors in Agriculture; option for Seniors in Applied Science. Prerequisite: Botany I and II.*

XII. Farm Accounting.—Aims and objects of farm accounts, farm inventories, single enterprise accounts, complete set of farm accounts and special records. Emphasis will be placed upon the interpretation of results as applied to the organization of a farm. *One recitation and one laboratory credit, first term. Elective for Seniors in Agriculture. Required for Seniors in Teacher-Training Course in Agriculture.*

XIII. Marketing of Farm Products.—Kinds of markets, methods of sale, marketing costs, prices, standardization of farm products, organization of co-operative markets. *Three recitation credits, second term. Elective for Seniors in Agriculture.*

A. Soils and Fertilizers.—An elementary course on the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Five recitation credits and one laboratory credit. Required of Short-Course students in Agriculture, first year.*

B. Crops and Rotations.—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various types of farms. *Five recitation credits and two laboratory credits, first term. Required of Short-Course students in Agriculture, second year.*

C. Farm Management.—An elementary course on the principles of farm management, equipment, cost of production. *Three recitation credits and one laboratory credit, second term. Required of Short-Course students in Agriculture, second year.*

D. Farm Machinery.—Care and repair of farm implements. *One recitation and three laboratory credits, second term. Required of Short-Course students in Agriculture, second year.*

ANIMAL HUSBANDRY

PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK, MR BRETT

The subjects in animal husbandry are so arranged as to furnish practical as well as theoretical instruction in the selection, care, and management of live stock on the farm. All students who graduate in agriculture are required to study breeds of stock, stock-judging, and veterinary practice. The student is taught how to select and care for farm animals. Students specializing in animal husbandry are offered advanced stock-judging, the principles of feeding, breeding, and the management of herds, flocks, and studs. Work in dairying is offered during the second term of the Junior year, and one who cares to specialize will find an elective thruout the Senior year.

Instruction in poultry culture is given during the Senior year, and is both practical and theoretical. During the same year an elective is offered in advanced poultry judging and poultry investigation. The equipment in poultry is particularly strong. The college poultry plant enables the student to obtain a large amount of practical experience in incubation, brooding, feeding, and general management. In addition to the poultry stock in the college yards, students have the opportunity of following the investigations which are being conducted by the experiment station. An eight weeks' course in poultry keeping is offered also during the winter months, full information concerning which may be obtained by addressing the President of the college.

Subjects

I. Stock Judging.—Scoring and comparison of various types of horses, cattle, sheep and swine, from the standpoint of the market and the producer. *Two laboratory credits, second term. Required of Freshmen in Agriculture, and of first-year students in Education Course, Agricultural option. Professor Ladd.*

II. Advanced Stock Judging.—A continuation of the work given in Animal Husbandry I in the judging of the various classes of farm animals. Tracing of pedigrees. Students chosen to represent the college in the annual stock judging contest will be credited with this subject. *Two laboratory credits, second term. Elective for Juniors or Seniors in Agriculture.* Professor Ladd.

III. Breeds.—History and characteristics of the principal types and breeds of farm animals. A study of conditions to which each is adapted. *Two recitation credits, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option.* Professor Ladd.

IV. Principles of Breeding.—A study of the science and art of breeding. Discussion of the laws of heredity as applied to improvement of animal types. Special attention is given to recent experimental work in breeding. *Three recitation credits, second term. Required of Seniors in Animal Husbandry; option for Seniors in Applied Science; elective for others. Prerequisite: Zoölogy III.* Professor Ladd.

V. Animal Husbandry. Management of Dairy Cattle. This subject covers the field of milk production. It includes the building up of the dairy herd; care and management of the dairy calf; cost of growing dairy heifers; selection and care of the dairy sire; cow testing associations, bull associations and calf clubs; advanced registry work; construction of dairy barns and silos; production of certified and high grade milk; cost of milk production. *Two recitation credits, first term. Elective for Seniors in Agriculture.* Professor Ladd.

VI. Feeds and Feeding.—Composition and digestibility of feeds, principles of animal nutrition. Various methods of feeding farm animals. Balanced rations. Feeding standards. Compounding and figuring the cost of rations for different types and classes of animals. *Three recitation credits, first term. Required of Seniors in Agriculture, in Teacher-Training Course in Agriculture, and of second-year students in Education Course, Agricultural option; option for Seniors in Applied Science. Prerequisite: Chemistry XIV.* Professor Ladd.

VII. Dairy Practice.—Lectures and laboratory practice in Babcock test and in handling milk and making butter on the farm. Herd testing methods. *One recitation and two laboratory credits, second term. Required of Juniors in Animal Husbandry and in Teacher-Training Course in Agriculture; elective for others.* Assistant Professor Burdick.

VIII. Dairy Practice.—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and two laboratory credits, thruout the year. Elective for Seniors in Agriculture.* Assistant Professor Burdick.

IX. Research and Literature.—*Hours to be arranged, first term. Elective for Seniors in Agriculture.* Professor Ladd.

X. Veterinary Practice.—Veterinary anatomy, materia medica, obstetrics, pathology. Combating disease from the farmer's standpoint. Causes and treatment of injuries. *Three recitation credits, first term. Required of Juniors in Agriculture and in Teacher-Training Course in Agriculture. Prerequisite: Zoölogy X.* Professor Ladd.

XI. Animal Husbandry.—Animal Nutrition.—Advanced study of the principles of animal nutrition. Consideration of the classes of food nutrients; functions of each in the body; digestion, absorption and assimilation; demands for maintenance, growth, fattening, milk and work. Compilation of experimental feeding data. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.*

XII. Poultry Culture.—A study of all branches of poultry keeping. *One recitation credit, first term. Required of Juniors in Agriculture and in Teacher-Training Course, in Agriculture, and of first-year students in Education Course, Agricultural option. Mr. Brett.*

XII. Poultry Culture.—Laboratory work, consisting of pen practice, incubation, brooding, killing and dressing. *Two laboratory credits, second term. Elective for Juniors in Agriculture. Mr. Brett.*

XIII. Judging Poultry.—Practice in judging standard poultry both by comparison and score card methods. *Two laboratory credits, first term. Elective for Seniors in Agriculture. Mr. Brett.*

XIV. Poultry Husbandry.—Study of poultry investigations and experimental work in various lines of poultry keeping. *At least two laboratory credits, thruout the year. Elective for Seniors in Agriculture and option for Seniors in Applied Science. Applied Science first term. Mr. Brett.*

XV. Management of Beef Cattle and Horses.—Studies will be made of successful practices in feeding for the market as well as advertising, fitting for sale and show ring, and the general care and management of beef cattle. Horse production including market classes of horses, their production and utility, and successful methods of handling and training horses. *Two recitation credits, first term. Elective for Seniors in Agriculture. Professor Ladd.*

XVI. Management of Sheep and Swine.—Production of mutton and wool; production of spring lambs; fattening sheep and lambs for market; general care and management of the breeding flock; advertising, fitting for sale and the show ring. Pork production, breeding, care and management, diseases, markets, cost of production. *Two recitation credits, second term. Elective for Seniors in Agriculture. Professor Ladd.*

A. Types and Breeds.—Breeds of horses, cattle, sheep, and swine. Emphasis is placed on the type best fitted to the agriculture of New England. *Two recitation credits, thruout the year. Required of Short-Course students in Agriculture, first year. Professor Ladd.*

B. Stock Judging.—Scoring of individuals and judging the various classes of animals and their adaptability to different purposes, as cattle for milk or beef production, horses for driving or draft. *Two laboratory credits, thruout the year. Required of Short-Course students in Agriculture, first year. Professor Ladd.*

C. Dairy Practice.—Babcock test for dairy products, production of sanitary milk, and butter making. *One recitation and three laboratory credits, first term. Required of Short-Course students in Agriculture, second year. Assistant Professor Burdick.*

D. Principles of Feeding.—Compounding rations. *Three recitation credits, first term. Required of Short-Course students in Agriculture, second year.* Professor Ladd.

E. Principles of Breeding.—A study of the selection of animals, heredity, and variation. *Two recitation credits and one laboratory credit, second term. Required of Short-Course students in Agriculture, second year.* Professor Ladd.

G. Live Stock Care and Sanitation.—Housing, care, and management of farm animals. Practical directions for handling of stock on the farm. *Two recitation credits, first term. Required of Short-Course students in Agriculture, second year.* Professor Ladd.

H. Poultry Keeping.—Study, demonstrations, and work in all of the practical branches of the poultry department. *One recitation and two laboratory credits, thruout the year. Required of Short-Course students in Agriculture, first year.* Mr. Brett.

I. Breeds of Poultry.—A study of the different breeds and types of poultry. *One laboratory credit, first term, second year.* Mr. Brett.

Horticulture

MR. RIMOLDI, MR. SCOTT

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the horticultural building. The main building contains the office and recitation rooms, together with photographic rooms. Attached to this building are greenhouses of modern construction, containing over 9,000 square feet under glass, 3,000 square feet of which is used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords the student an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens, and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity for the study of apples and pears especially. A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects

I. Propagation of Plants.—Different methods, including seed testing. Soft, green, and hardwood cuttings. Layering, grafting, and budding. *One recitation and one laboratory credit, first term. Required of Freshmen in Agriculture, in Teacher-Training Course in Agriculture. Option for Juniors in Applied Science.*

II. Vegetable Gardening.—Underlying principles and types of vegetable gardening; study of individual crops; text-book work. *Two recitation credits, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option; option for Seniors in Applied Science.*

III. Fruit Culture.—Fundamental principles of orcharding; soil, fertilizer, and cultivation. Methods of laying out orchards and planting. Tillage, pruning, and spraying. Harvesting and storing fruits. Collateral reading and practical work. *Two recitation credits, first term. Required of Juniors in Agriculture, in Teacher-Training Course, in Agriculture, and of second-year students in Education Course, Agricultural option.*

IV. Spraying and Pruning.—Preparation and application of spray mixtures; insecticides and fungicides. Methods of application for different orchard enemies, and machinery used. Pruning of fruit trees and ornamental shrubs. *One recitation and one laboratory credit, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option; option for Juniors in Applied Science.*

V. Greenhouse Construction and Management.—Study of the different types of glasshouse structures; methods of heating and ventilating. *One recitation and two laboratory credits, second term. Elective for Juniors in Agriculture.*

VI. Floriculture.—History of floriculture. Study of greenhouse plants, collectively and individually; practical work in propagation, potting, watering, ventilating, fumigating, and spraying. Study of bulbs, bedding plants, palms and ferns. *One recitation and two laboratory credits, entire year. Elective for Seniors in Agriculture. Prerequisites: Horticulture V.*

VII. Horticulture By-Products.—Principles of canning and preserving fruits, manufacture of fruit juices and butters, cider, vinegar, evaporated fruits, pickles, sauces, jams and jellies. The aim of this subject is to equip the student with a knowledge of the means of converting surplus and low grade horticultural products into salable manufactured goods so as to make profits where losses might otherwise occur. *Two recitation credits, first term. Elective for Seniors in Agriculture. Prerequisite: Hort. III or Hort. XVII.*

VIII. Literature of Horticulture.—See Agronomy IX.

IX. Assigned Work.—Special subjects chosen by the student. *Elective for Seniors in Agriculture. Hours to be arranged.*

X. Pomology.—Orchard and bush fruits. Study of types; origin, and history; classification, description, and methods of handling. Orchard management. *One recitation credit and two laboratory credits, thruout the year. Option for Seniors in Agriculture and Applied Science, first term; elective second term. Prerequisite: Horticulture III.*

XI. Advanced Vegetable Gardening.—Study of one or more crops selected by student. Practical work, research work, and text-book. *One recitation credit and two laboratory credits, second term. Elective for Seniors in Agriculture.*

XII. Plant Breeding.—See Agronomy XI.

XVI. Landscape Gardening.—This subject is designed for students in general, and consists in the application of the rules and principles governing landscape design, the laying out of farm, village, and city places, making of lawns. The use of ornamental trees and shrubs, flower beds, etc. *One recitation and two laboratory credits, first term. Required of Juniors in Agriculture, in Teacher-Training Course in Agriculture, and of first-year students in Education Course, Agricultural option; option for Seniors in Applied Science. Prerequisite: Botany III.*

XVII. Small Fruits and Grapes.—The strawberry, raspberry, blackberry, dewberry, currant, gooseberry, grape. History; extent of cultivation; and management in home and commercial plantations. *Two recitation and one laboratory credit, second term. Given in alternate years, 1920, 1922. Required of Juniors in Teacher-Training Course in Agriculture, and of second-year students in Education Course, Agricultural option; option for Juniors and Seniors in Agriculture.*

A. Vegetable Gardening.—Fundamental principles of vegetable growing. Practical work in cold frames, hotbeds, and garden planting. *Three recitation credits and one and one-half laboratory credits, second term. Required of Short-Course students in Agriculture, second year.*

B. Fruit Culture.—Study of fruits; propagation; planning fruit gardens and plantations; harvesting and packing; care. *Three recitation credits and one laboratory credit, first term. Required of Short-Course students in Agriculture, second year.*

E. Spraying and Pruning.—A study of the methods used in combating insect pests and plant diseases. Preparation and application of fungicides and insecticides. Study of nozzels, pumps, etc. *Two recitation and one and one-half laboratory credits, second term. Required of Short-Course students in Agriculture, second year.*

F. Home Grounds.—A study of the materials to use, the essential principles of the art of landscape design. Practice in designing, planting, and care of home grounds. *Three recitation credits, second term. Required of Short-Course students in Agriculture, second year.*

G. Propagation of Plants.—A study of the different methods of plant propagation. *One laboratory credit, first term, second year. Required of Short-Course students in Agriculture.*

Bacteriology

PROFESSOR HADLEY

The instruction in bacteriology is arranged to meet the requirements of two classes of students:

1. In the first place the subject is presented in an elementary way for those whose main interest lies in other fields of work, but who at the same time desire a general knowledge of micro-organisms

and their relation to problems of human life, including agriculture, sanitation, foods, and the many problems of personal and public health and hygiene. For such students Bacteriology I₁ and I₂ are offered. The subject requires some familiarity with certain fundamental biological principles, an appreciation of which can be derived thru Zoölogy I or Botany I. For this reason one or the other of these subjects is made a prerequisite. Bacteriology I is taught by means of laboratory work supplemented by lectures and required reading.

2. In the second place the work in bacteriology is arranged to afford opportunity for specialization on the part of the students in the Applied Science Course who anticipate entering some branch of applied bacteriology after graduation. Such specialization naturally looks forward to service in (1) the educational, (2) the commercial, (3) the municipal or (4) the research field, as exemplified by (1) college teaching, (2) private manufacturing laboratories of biologic products, (3) departments of public health (city or state), and (4) the State Agricultural Experiment Stations and privately endowed institutions of research, respectively. For students desiring to specialize in any of these fields, Bacteriology II₁ and II₂ are offered. These subjects are not suited to and are not recommended for students who do not intend to specialize in bacteriology or in a closely allied subject. They should be preceded by advanced language work in German or French III, by other biological subjects which afford a foundation in anatomy (both gross and microscopic) and physiology; and, if possible, should be preceded or accompanied by physiological chemistry (Chemistry XIX).

In Bacteriology II₁, opportunity is offered to acquire advanced bacteriological technique. The program is confined largely to laboratory work. In the second term of advanced bacteriology (II₂) advanced technique is continued with special reference to diagnostic blood tests involving agglutination, precipitation and complement-fixation methods. In addition the student may be permitted to pursue individual work on a selected problem and opportunity is offered to become familiar with some of the methods of bacteriological research. This work may be outlined with special reference to the particular branch of the subject which the student plans to enter, such as agricultural, industrial or pathogenic bacteriology. Bacteriology II₂ also involves assigned reading and the

discussion (seminar) of bacteriological and protozoölogical theories and problems, and requires a minimum of ten hours attendance.

Subjects

I₁. General Bacteriology (systematic).—A subject designed to give the student a general knowledge of the bacteria; a study of laboratory methods and technique for the cultivation of bacteria; the isolation and determination of unknown species. *One recitation credit and two laboratory credits, first term. Prerequisite: Botany I or Zoölogy I. Required of Seniors in Agriculture and of second-year students in Education Course, Science and Home Economics options. Elective for Juniors and Seniors in other courses. Bacteriology I₁ and I₂ must be taken continuously.*

I₂. General Bacteriology (applied).—A subject designed to acquaint the student with the varied application of bacteriology to practical problems, including the bacteriology of air, water, milk and other dairy products, together with the relation of bacteria to agronomy, dairying, hygiene and to the prevention, diagnosis and treatment of communicable diseases. *One recitation credit and two laboratory credits, second term. Prerequisite: Bacteriology I₁. Required of Seniors in Agriculture and of second-year students in Education Course, Science and Home Economics options. Elective for Juniors and Seniors in other courses. Bacteriology I₁ and I₂ must be taken continuously.*

II₁. Advanced Bacteriological Technique.—A study of special methods employed in the investigation of bacteriological problems. The work includes the preparation of culture media, the bacteriological examination of air, shell-fish and meats; a study of enzyme production by bacteria; of acid production; the relation of bacterial growth to oxygen supply; determination of thermal death point, of testing the germicidal power of unknown disinfectants; filtration; pathogenesis and virulence; experimental inoculations, post-mortem examinations; active and passive immunization. *Four laboratory credits, first term. Prerequisite: (beginning 1917), Zoölogy VIII, and (beginning 1918), German or French III. Elective for Seniors who have passed with B grade in Bacteriology I₁ and I₂.*

II₂. Advanced Bacteriological Technique.—Theories and Problems.—Laboratory studies involving the examination of the blood by bacteriological, histological and serological methods; serological diagnosis; forensic blood tests, etc. Assigned reading and discussions. *Four laboratory credits, second term. Elective for Seniors who have passed with credit in Bacteriology II₁.*

Botany

PROFESSOR MERROW

The subjects of this department are fundamental to much of the technical work in agriculture and home economics. Plants for study are near at hand. A great variety of economic plants is grown on the land of the experiment station, and in the fields of the college farm.

Many trees and shrubs are cultivated on the campus and plants of the native flora are always available. The greenhouses also furnish much material. The laboratory is equipped with dissecting and compound microscopes, paraffin bath, and simple physiological apparatus. A good working library, including several botanical periodicals, charts, models, and an herbarium of about 6,500 specimens are important factors.

Subjects

I. General Botany.—A study of common plants, their structure, physiology, evolution, and adaptation to environment. *Two laboratory credits and one recitation credit thruout the year. Required of Freshmen in Agriculture and Applied Science, of Sophomores in Home Economics, and of first-year students in Education Course.* Professor Merrow.

II. Botany of crop plants and weeds.—*Two laboratory credits and one recitation credit, first term. Required of Sophomores in Agriculture and Applied Science and of second-year students in Education course, Agricultural option.* Professor Merrow.

III. Trees and shrubs.—The determination of native and introduced trees and shrubs in summer and winter condition. *One laboratory or field credit, thruout the year. Required of Sophomores in Agriculture, of first-year students in Education Course, Agricultural option, and of second-year students, Education Course, Science option.*

IV. Forestry.—The management of New England wood lots. *Two credits, second term. Given in alternate years. Option for Juniors or Seniors in Agriculture.*

V. Histology.—Seed plants are studied by the usual histological methods of imbedding, sectioning and staining. *Four laboratory credits and one recitation credit first term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.* Professor Merrow.

VI. Pathology.—Parastic fungi, the diseases of economic plants caused by them, and the treatment. *Four laboratory credits and one recitation credit, second term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.* Professor Merrow.

VII. Assigned Work.—*Three credits thruout the year. Elective for Seniors in Applied Science and Agriculture.* Professor Merrow.

A. Plant Life.—Elementary agricultural botany.—*Two and a half laboratory credits and one recitation credit, thruout the year. Required of Short-Course students in Agriculture, first year.*

Chemistry

PROFESSOR LEIGHTON, PROFESSOR HARTWELL, ASSISTANT PROFESSOR PERKINS

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. The work is designed to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including the principal technical processes, and a brief account of the carbon compounds. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Two periods per week for the first half-year and three for the second half-year are devoted to the lectures and recitations, and three hours per week for a half-year to the practical work in the laboratory, where the student has an opportunity to verify some of the chemical theories and to become familiar with substances and their chemical behavior. During the second half of this year the laboratory period is devoted to qualitative analysis, which for Chemical Engineering and Applied Science students continues thru the first half of the Sophomore year. The subject is taught in part by means of recitations and lectures, but mainly by work in the laboratory. Students are required to complete a systematic course in basic and acid analysis, and to analyze correctly a number of alloys, salts, and minerals.

Quantitative analysis is taught mainly by laboratory practice, but sufficient time is devoted to lectures and recitations to teach thoroughly the fundamental principles involved. The work comprises gravimetric and volumetric analysis, and the quantitative determination of salts, alloys, ores, minerals, and commercial and food products. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such theoretical and practical knowledge as to prepare him for analytical work of any kind.

The study of organic chemistry begins with a short course, designed to cover the general principles and methods, and to include a description of the more important compounds. The subject is continued by those who wish to specialize in chemistry in a more extended course covering the aromatic series and the chemistry of the dyestuffs, and accompanied by laboratory work in organic preparations and analysis. The theoretical and basic principles of chem-

istry, with their general application, are thoroly studied by recitation, lectures, and laboratory work in the course in physical chemistry.

The descriptive side of industrial chemistry, which comprises a general survey of the technical applications of chemical principles to the arts and industries, is studied by recitation work; while practical technical operations, such as textile coloring, suited to the needs of the individual student, are studied by laboratory practice.

Agricultural chemistry, required of agricultural students in the Sophomore year, embodies the chemistry of soils and fertilizers, also the chemistry involved in the changes which take place during the growth of animals and plants, as well as in the storage or manufacture of the ordinary farm products.

Subject XXI is intended to familiarize the student with the general field of chemical literature, and to inculcate the habit of keeping up with the recent advance in chemical science by reports and discussion of articles appearing in the chemical journals. This course is preparatory for Subject XX, which involves original investigation.

The laboratory occupies the first floor and a part of the basement of Science Hall, seventeen rooms altogether, including a large general laboratory, organic and analytical laboratories, weighing room, library, large lecture room, recitation room, two offices, store rooms and supply room. It is well equipped with apparatus and consulting library for teaching the subjects mentioned below.

Subjects

I. General Chemistry.—*Two recitation and one and one-half laboratory credits, first term. Required of Freshmen in all courses, and of first-year students in Education Courses. Mr. Perkins.*

II. General Chemistry and Qualitative Analysis.—*Three recitation and one and one-half laboratory credits, second term. Required of Freshmen in all courses and of first-year students in Education Courses. Mr. Perkins.*

III. Qualitative Analysis.—Basic and acid analysis; analysis of salts, industrial and natural products. *Three laboratory credits, first term. Required of Sophomores in Applied Science and Chemical Engineering and in Education Course, Science option. Professor Leighton.*

IVa. Organic Chemistry.—*Three recitation credits and one and one-half laboratory credits, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Required of second-year students, Education Course, Agricultural and Home Economics options, and optional for second-year students, Education Course, Science option. Professor Leighton.*

IVb. Organic Chemistry.—*Three recitation credits and one laboratory credit, first term. Required of Sophomores in Home Economics, Agriculture, and Applied Science; elective for others who have completed Chemistry III.* Professor Leighton.

V. Organic Chemistry (advanced).—*To be given alternate years. Given in 1920. Four recitation credits, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV.* Professor Leighton.

VI. Organic Chemical Laboratory.—*Three laboratory credits, second term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV.* Professor Leighton.

VII. Quantitative Analysis.—*Gravimetric and volumetric analysis. Analysis of minerals, ores, alloys, and industrial products. Three laboratory credits, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III.* Professor Leighton.

VIII. Quantitative Analysis.—*Five laboratory credits, second term, Junior year. Required of students in Chemical Engineering, and of students who take the Chemical Option in Applied Science. Elective for those who have completed Chemistry III.* Professor Leighton.

X. Quantitative Analysis.—*Food Analysis.—To be given alternate years; given in 1920. Four laboratory credits, second term. Required of Seniors and Juniors in Home Economics and in Teacher-Training Course in Home Economics. Elective for others who have completed Chemistry IV.* Professor Leighton.

XII. Physical Chemistry.—*To be given alternate years. Given next in 1921. Four recitation credits, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry III.* Professor Leighton.

XIV. Agricultural Chemistry.—*Four recitation credits, second term. Required of Sophomores in Agriculture and of second-year students in Education Course, Agricultural option. Prerequisite: Chemistry I, II and IV.* Professor Hartwell.

XV. Gas Analysis.—*See Mechanical Engineering XV.*

XVI. Industrial Chemistry. *Four recitation credits, first term. Required of Juniors in Chemical Engineering and of Juniors who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV.* Professor Leighton.

XVII. Industrial Chemistry.—*The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis, explosives, and textile coloring. Four credits, first term. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical Option in Applied Science.* Professor Leighton.

XIX. Physiological Chemistry.—To be given alternate years. Given next in 1921. *Four credits, second term. Required of Seniors and Juniors in Home Economics and in Teacher-Training Course in Home Economics; option in Applied Science for Seniors. Professor Leighton.*

XX. Assigned Work.—*Three credits, thruout the year. Required of Seniors in Chemical Engineering who do not take the work in the Reserve Officers' Training Corps. Required for the first term of Seniors who take the Chemical Option in Applied Science. Professor Leighton.*

XXI. Reports and Discussion of Chemical Subjects and Recent Investigations.—*Two credits, thruout the year. Required of Seniors in Chemical Engineering; and of Seniors taking the Chemical Option in Applied Science. Professor Leighton.*

XXII. Organic and Physical Chemistry.—*Two credits, second term. Required of Seniors in Chemical Engineering, and of those who take the Chemical Option in Applied Science. Professor Leighton.*

Drawing,—Freehand

MISS ELDRED

The purpose of the subjects described below is to meet the drawing requirements of the Science laboratories, to give some knowledge of the principles of design and their practical applications, and to develop the appreciation of beauty in nature and in art. For agricultural and applied science students the work comprises outline drawing in pencil, from plant and animal forms and from objects chosen to illustrate the principles of perspective. In the home economics course, greater emphasis is placed upon the principles and practice of design, upon the study of color and color harmony, and upon the application of all these to such problems as those of costume and the arrangement, furnishing, and decoration of the home. The brief course in the history of art aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. The department has a considerable equipment of illustrative material for this work, including a collection of about one hundred and fifty casts and some four hundred photographs of folio or larger size, with several thousand smaller prints.

Subjects

II. Pencil Drawing from Objects.—Chiefly drawing from plant and animal forms, with some work in freehand perspective. *One laboratory credit, first term. Required of Freshmen in Agriculture. One laboratory credit, thruout the year.*

Required of Freshmen in Applied Science, and of first-year students in Education Course, Science option.

III. History of Art.—A brief survey of European art to about 1850, with the twofold purpose of showing the relation between art and the life of the people in various periods and of developing the appreciation of beauty as found in the fine arts. *Two recitation credits, second term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics.*

V. Drawing in Charcoal from Still Life or the Cast.—*Two or more laboratory credits, second term. Elective.*

VI. Pen-and-Ink Drawing, Water Color or Pastel.—*Two or more laboratory credits, second term. Elective.*

VII. Modeling in Clay, from Cast or Object.—*Three laboratory credits, second term. Elective.*

VIII. Architectural Drawing and Interior Decoration.—The drawing of house plans, etc., exercises illustrating the application of design principles to the planning, decoration, and furnishing of the home. *Two laboratory credits, second term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics.*

IX. History of American Art.—A study of American art and its relation to the national life. *Two recitation credits, first or second term. Elective.*

X. History of Modern European Art.—A continuation of subject III. *Two recitation credits, second term. Elective.*

XI. Theory of Design.—Costume Design.—Further study of the principles of design taken up in subject XII, with especial reference to their application in costume design. *Two laboratory credits, first term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics.*

XII. Drawing and Design.—An elementary consideration, by means of analysis, criticism, and original design, of the elements of beauty (including color) as exemplified in the industrial arts. *Three laboratory credits, second term. Required of Freshmen in Home Economics, and of first-year students, Education Course, Home Economics option.*

XIII. The Appreciation of Art.—A study of certain masterpieces for the elements of beauty which they present, without especial reference to their historical relations. The aim is to emphasize the operation in the fine arts of the same design principles already studied in the industrial arts, to provide a foundation for the study of the history of art, and to develop increased capacity for the enjoyment of beauty. *Two recitation credits, first or second term. Elective.*

Economic and Social Science

PRESIDENT EDWARDS

I. Economics.—Text-book, supplemented by lectures, reading, and essay. *Three recitation credits, first term. Required of Seniors in all courses.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.*

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmers, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations; federation of rural social forces. *Elective.*

Engineering,—Chemical

PROFESSOR LEIGHTON, MR. PERKINS

The course in chemical engineering is based upon the principles of chemistry and of mechanical and electrical engineering. It is designed to prepare men for those industries in which chemical processes play a vital part. The subjects in chemistry aim to train the student thoroly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the various branches of chemical analysis, and to make him familiar with the practical applications of chemistry. The subjects in mathematics, physics, mechanical and electrical engineering aim to give the training necessary to solve the mechanical and electrical problems that present themselves when chemistry is applied to the industries.

While the primary purpose is to turn out men well equipped to take up any line of chemical engineering, yet, owing to the important textile interests in this state, and the increasing importance of the manufacture of chemicals and dyestuffs, especial emphasis is placed on the manufacture and application of dyes. The following are some of the industries which offer opportunities to the chemist and the chemical engineer:—The manufacture of chemicals and dyestuffs; the bleaching and dyeing of cotton, wool, and silk; the manufacture of fertilizers, explosives, hydraulic cement, clay, products, glass, sugar, paper pulp, paper, soap, paint and varnish; the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion or destructive distillation to form gas, coke, and tar, embracing further the whole field of forest-products utilization; and the processes of water and sewage purification.

A detailed description of the subjects will be found under their respective departments.

Engineering,—Civil

PROFESSOR WEBSTER

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various fields of civil engineering. With this object in view, application of the theories and principles learned in the class-room is made in the field, laboratory, and drafting room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the students' opportunities, the name of the department has been changed from Highway Engineering to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance of highway engineering in this state and thruout the country in general, considerable emphasis is still placed on this phase of engineering work.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and testing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects.

Subjects

I. Surveying.—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering, and in Agriculture.*

II. Topographic Surveying.—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits, second term. Required of Sophomores in Civil Engineering.*

III₁. Railroad Engineering.—The work consists of a reconnoissance, a preliminary and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates

are made. A study is also made of the properties of curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Five credits, divided between field and recitation as seems advisable, first term. Required of Juniors in Civil Engineering.*

III₂. Railroad Engineering.—The principles of economic railroad construction and maintenance; railway appliances, ballast, and roadbed, culverts and trestles, turnouts, sidings, yards, terminals, signaling, locomotive and grade problems, betterment surveys, etc. *Three recitation credits, second term. Required of Juniors in Civil Engineering.*

IV. Graphic Statics.—Instruction is given in graphic statics and its application in the design of simple framed structures. *Two recitation credits, first term. Required of Juniors in Civil Engineering.*

V. Roads and Pavements.—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction and maintenance of earth, gravel, and macadam roads, together with a discussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the construction of a gravel or macadam road on the college grounds. *Three recitation credits and one field credit, second term. Required of Juniors in Civil Engineering.*

VI. Bridge Details.—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *Two laboratory credits, first term. Required of Seniors in Civil Engineering.*

VII. Bridge Analysis.—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

VIII. Bridge Design.—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits, second term. Required of Seniors in Civil Engineering.*

IX. Masonry Construction.—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and a systematic and thoro laboratory course on cement testing is given. *Two recitation credits and one laboratory credit, second term. Required of Seniors in Civil Engineering.*

X. Reinforced Concrete.—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XI. Sewerage.—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers; removal of house sewage; the design and construction of sewers and method of sewage disposal. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of waterworks, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitation credits, second term. Required of Seniors in Civil Engineering.*

XIII. Tunneling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit, second term. Elective for Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XV. Assigned Work.—With the advice and consent of the head of department, the student elects three hours' work in the Senior year. This may be research, thesis, or recitation and laboratory work, depending upon the qualifications of the student. *Three credits, thruout the year. Required of Seniors in Civil Engineering.*

XVII. Metal Structures.—The graphic determination of stresses in steel mill buildings. *One laboratory credit, second term. Elective for Seniors in Civil Engineering.*

XVIII. Irrigation Engineering.—This includes a study of the impounding, diverting, flow, and measurement of water, quantity required, canals, canal works, storage reservoirs, waterways, etc. *Three recitation credits, first term. Elective for Seniors in Civil Engineering.*

Engineering,—Electrical

PROFESSOR DICKINSON

The aim of the course in electrical engineering is to give the student such training in the fundamental principles of the subject as will fit him to take up, in an intelligent and effective manner, any line of engineering work requiring special electrical knowledge. Instruction is given in both class-room and laboratory, the aim of each method of instruction being to supplement the other, and to develop resourcefulness and the habit of independent thought on the part of the students.

Subjects

I. Theory of Direct Currents.—A detailed study of the theory of direct-current apparatus. The theory of dynamos, motors, and auxiliary apparatus.

Three recitation credits, first term. Required of Juniors in Electrical Engineering and of Seniors in Chemical, Mechanical and Civil Engineering.

II. Direct-Current Laboratory.—A series of tests of various types of direct-current apparatus. These include magnetization and characteristic curves of different types of machines, as well as tests for efficiency, regulation, temperature rise, and tests of a similar nature. *Three laboratory credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

III. Principles of Electrical Engineering.—A subject designed to emphasize the fundamental laws of electric and magnetic circuits. Special attention is given to the units employed, and to methods of measurement. Inductance and capacity are studied at considerable length, and their effects in circuits of variable E. M. F. is discussed. *One recitation credit for the last nine weeks of second term, Sophomore year; and one recitation credit for eighteen weeks, first term, Junior year. Required of students in Electrical Engineering.*

IV. Theory of Alternating Currents.—Recitations and lectures. The elements of the theory of alternating currents and of alternating-current machinery. This subject includes the simple theories regarding the action of A. C. dynamos, motors, converters, and transformers. *Two recitation credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical and Civil Engineering.*

V. Theory of Alternating Currents.—Recitations and lectures, continuing subject IV. The more advanced theories regarding the effect of inductance and capacity in A. C. circuits, and of the action of A. C. machinery, are discussed. Assigned readings and reports are a feature of the subject. *Three recitation credits, thruout the year. Required of Seniors in Electrical Engineering.*

VI. Alternating-Current Laboratory.—A series of tests of different types of alternating-current apparatus, such as single and polyphase generators and motors, induction motors, converters, and transformers. *Three laboratory credits, thruout the year. Required of Seniors in Electrical Engineering.*

VII. Design of Electrical Machinery.—General principles of the design of electrical apparatus, including a direct and an alternating current generator. *Three laboratory credits, second term. Required of Seniors in Electrical Engineering.*

VIII. Telephone Engineering.—A consideration of the development of the modern telephone, with special reference to the common battery systems. *One recitation credit, second term. Required of Seniors in Electrical Engineering.*

X. Transmission of Energy.—A study of systems of high-tension distribution, the effect of capacity and inductance, the construction of lines, their protection, and the troubles developing in high-tension work. *Four recitation credits, second term. Required of Seniors in Electrical Engineering.*

XI. Electric Railway Engineering.—A discussion of the economic considerations in the development of an electric railway, methods of construction, the location of the generating station, the design of the distributing system, types of motors, and systems of control. *Two recitation credits, second term. Required of Seniors in Electrical Engineering.*

XII. Assigned Work.—Members of the senior class are required to prepare and to present before the class, papers, discussions, and reports upon topics of interest to engineers. As a rule, each student presents about eight papers in the course of the year's work.

A portion of the assigned time is also devoted to research work, the amount of time so used varying with the nature of the problem, and the ability of the student profitably to utilize the time. *Three laboratory credits, thruout the year. Required of Seniors in Electrical Engineering.*

Engineering,—Mechanical

PROFESSOR WALES, MR. ELDRED, MR. KNOWLES, MR. OLSEN

It is the object of the work in the department of mechanical engineering to turn out broad-gauged, self-dependent men, well trained in engineering theory, familiar with the practical matters of construction and operation, and having some knowledge of the economic relations which the engineer and industrial development bear to modern society. In the endeavor to train men who will touch life, not at one point, but at many, the work of the department is supplemented and rounded out by extended and vigorous courses along the lines of electrical engineering, physics, mathematics, chemistry, English, history, modern languages, and political economy. The special work of the department of mechanical engineering divides itself naturally into the following general groups: shop practice, design, steam engineering, and experimental engineering. Each of the above groups is amplified and briefly described below:

SHOP PRACTICE

The object of this work is to give familiarity with principles, operations, possibilities, and management, rather than to develop the greatest dexterity in manipulation. Shop practice extends over three years of the course, and comprises forging and foundry work, pattern making, and machine-tool operation. The shops are exceptionally well equipped with machines and tools of all kinds. In the machine shop are six metal lathes, speed lathes, planes, 16-in. shaper, two drills, two tool grinders, drill grinder, milling machine, punching-press, vertical boring and turning mill, together with the usual assortment of tools and auxiliaries. The pattern shop is provided with lathes, circular saw, band saw, jig saw, dowel machine, surface and buzz planers, etc. Fifteen work-benches fully provided with the small tools of the pattern maker complete the equipment. The forge shop is equipped with the usual anvils, forges, fullers, swages,

hardies, etc., while a full stock of patterns, shovels, riddles, flasks, and trowels is provided for the work in foundry practice. Enthusiasm is given to the work by the construction of things of real value—a new machine for the shop or a piece of apparatus for the laboratory—instead of spending the whole time on worthless “exercises.”

DESIGN

The work along the lines of design extends thruout the four years, beginning with freehand and mechanical drawing and ending with machine design and power-plant design in the Senior year. Leading up to this final work are the terms of mechanical drawing, descriptive geometry, mechanism, valve gears, dynamics of machines, mechanics, strength of materials, hydraulics, and thermo-dynamics. All the forces of correct theory and the practice of the most successful builders are brought to bear upon the solution of definite, practical problems.

STEAM ENGINEERING

Steam engineering begins in the Junior year and runs thru the remainder of the course. A rigorous study of the mathematical theory of thermo-dynamics supplies the foundation for the study of boilers and engines, design and economy, and the various devices and auxiliaries of the power plant. In the Senior year is considered the particular branch of heating and ventilating. In this year, also, the subject of power plants is taken up, which applies all the previous training in steam engineering, and which brings together and unifies all allied subjects.

EXPERIMENTAL ENGINEERING

This subject, which extends thruout the Junior and Senior years, is intended to fix the theory developed in all the other lines of work. Instruction is given by means of lectures and laboratory tests. The student becomes familiar with the theory, construction, use, and calibration of the instruments and apparatus used by the engineer, and gains experience in making accurate standard and special tests. The work is divided into four groups: one dealing with the chemical problems of engineering—testing of gases, oils, fuels, feed water, etc.; a second, with general calibration and testing; a third, with the study and tests of structural materials; and the fourth, with general power-plant testing. In power-plant testing

the students make the necessary plans and preparations, perform the experimental work, and prepare formal reports, with recommendations for improvement in economy, etc. These tests are made not only on the college power-plants, but on those of manufacturing establishments of the State. The equipment for experimental work comprises several boilers and steam engines, large steam pump, gas engines, feed-water heaters, several steam and gas engine indicators, steam calorimeters, tanks, scales, injectors, water turbine, hydraulic ram, pulsometer, centrifugal pump, belt pump, weirs, two-stage air compressor, air-brake outfit, meters, gauges, 50,000-lb. tension and compression machine, apparatus for oil and gas testing, fuel calorimeter, complete outfit for testing cements and concretes, etc. Thruout the work the greatest stress is laid upon the correct calculation and interpretation of results, and accuracy and self-dependence are developed to the fullest.

Subjects

I. Mechanical Drawing.—Lettering, freehand sketching, use of drafting tools, geometrical problems, projections, machine parts. *Four laboratory credits, first term. Required of Freshmen in Engineering.* Mr. Eldred.

II. Forge and Foundry.—Forging, drawing, bending, welding, etc. Principles of moulding, core making, and casting. *Two laboratory credits, first term. Required of Freshmen in Engineering.* Mr. Olsen.

III. Pattern Making.—Use of tools, bench and lathe work, pattern making. *Two laboratory credits, second term. Required of Freshmen in Engineering.* Mr. Olsen.

V. Descriptive Geometry.—Elementary principles; problems relating to the point, line, plane, cylinder and double curved surfaces of revolution, intersections, and developments. *One recitation and two laboratory credits, second term. Required of all Freshmen in Engineering.* Mr. Eldred.

VI₁. Mechanical Drawing.—Detail and assembly drawings, elementary machine design. *Two laboratory credits, first term. Required of Sophomores in Mechanical, Electrical, Civil, and Chemical Engineering.* Mr. Eldred.

VI₂. Mechanical Drawing.—Continuation of Mechanical Engineering VI. *Two laboratory credits, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.* Mr. Eldred.

VII. Machine Shop.—Hand work in chipping and filing, use of machine tools, construction of machines. *Three laboratory credits, second term; required of Sophomores in Electrical Engineering. One and one-half laboratory credits, second term; required of Sophomores in Civil Engineering.* Mr. Olsen.

VIII. Machine Drafting.—Technique of machine drafting, application of kinematics to the design of gears, valves, linkages, quick-return motions, etc. *Three laboratory credits, first term. Required of Juniors in Mechanical Engineering.* Mr. Eldred.

IX₁. Heat Engineering.—Thermo-dynamics.—Mathematical development and discussion of the laws of thermo-dynamics, and their application to perfect gases, saturated and superheated steam. Theory of air compressors, pneumatic machinery, hot-air engines, gas engines, and refrigerating machines. Boilers, engines, engine economy, effect of cylinder walls, compounding, superheating, use of jackets, varying cut-off, speed, pressure, etc. Flow of fluids, injectors, and thermo-dynamic principles applied to the steam turbine. *Three recitation credits, first term. Required of Juniors in Mechanical, Electrical, and Civil Engineering, and Seniors in Chemical Engineering.* Professor Wales.

IX₂. Heat Engineering.—Continuation of Mechanical Engineering IX. *Three recitation credits, second term. Required of Juniors in Mechanical and Electrical Engineering; and for nine weeks, of Seniors in Chemical Engineering.* Professor Wales.

X₁. Applied Mechanics.—Forces, composition and resolution, parallel forces, moments, couples, centres of gravity, velocity, acceleration, energy and momentum, falling bodies and projectiles, centrifugal force, moment of inertia, radius of gyration, angular momentum, energy of rotating bodies, impact, etc. Solution of practical problems. *Five recitation credits, first term. Required of all Juniors in Engineering.* Professor Wales.

X₂. Applied Mechanics.—Strength of materials, stresses in structures, riveted joints, beam theory, struts, columns, shafting, springs, etc. Solution of practical problems. *Five recitation credits, for six weeks, second term. Required of all Juniors in Engineering.* Professor Wales.

XI. Hydraulics.—General principles, head and pressure, center of pressure, velocity of discharge, flow through orifices and over weirs, Bernoulli's theorem, flow through pipes, flow through conduits and canals, energy of flow, horse-power, hydraulic machinery, rams, turbines, centrifugal pumps, and Pelton wheels Merriman's Treatise on Hydraulics. *Five recitation credits per week, for last twelve weeks of second term. Required of all Juniors in Engineering.* Professor Wales.

XII. Mechanism.—Instantaneous centers, centroids, lobed wheels, belts, pulleys, four-bar linkages, graphical determination of velocity ratios, quick-return motions, straight-line motions, pantographs, trains of gears, epicyclic trains, tooth gearing, epicycloidal and involute teeth, bevel wheels, etc. Schwamb and Merrill's Mechanism. *Three recitation credits per week, second term. Required of Sophomores in Mechanical and of Seniors in Chemical Engineering.* Mr. Knowles.

XIII. Valve Gears and Dynamics.—Plane slide valves, piston valves, riding cut-off valves; Joy and Marshall gears; Stephenson, Gooch, and Walschart link motions; drop cut-off valves; Corliss, Brown, and Putnam valves. Peabody's Valve Gears. Lectures and references. *Three recitation credits per week, second term. Required of Juniors in Mechanical Engineering.* Mr. Knowles.

XIV₁. Machine Shop.—Advanced work in machine construction. *Three laboratory credits per week, throughout the year. Required of Juniors in Mechanical Engineering.* Mr. Olsen.

XIV₁. Continuation of Mechanical Engineering XIV. Same requirements.

XV. Experimental Engineering a.—Lectures and laboratory work in gases, oils, and fuels; flue-gas analysis, calculation of air per pound of coal, loss due to excess air and to imperfect combustion; analysis of fuel gases and calculation of heating values; determination of heating values by the Junkers and Parr calorimeters; study of gases in producer and gas-engine work. Analysis of coal and other fuels. Analysis and testing of lubricating and fuel oils. Testing of boiler waters. *One recitation and one laboratory credit, first term. Required of Juniors in Mechanical and Electrical Engineering.* Professor Wales.

XVI. Experimental Engineering b.—General calibration and testing of engineering instruments and apparatus; gauges; planimeter; manometers; indicators; Prony brakes; scales; valve setting by measurement and by the indicator; Carpenter calorimeter; Peabody calorimeter; flow through orifices; weirs; nozzles; Pitot tube; meters; Venturi meters; hydraulic ram; turbine, etc. *Two laboratory credits per week, second term. Required of Juniors in Mechanical, Electrical and Civil Engineering.* Mr. Knowles.

XVII. Experimental Engineering c.—Properties of materials. Lectures on the metallurgy of iron and steel; effects of impurities; cold-working; repeated stresses; tensile, compressive, and shearing strengths; ductility; resilience, etc.; copper, brass, bronze, and other alloys; timber, stone, and brick. The manufacture of natural and Portland cements; effects of over-and under-burning, over-liming, SO_3 , etc.; discussion of tests and their interpretation. Laboratory work is parallel with lectures. Tensile strengths of cast-iron, wrought-iron, and steel; compressive strength of metals, timber, concrete, cement; shearing tests of metals; transverse tests of timber and iron; stress-strain diagram, elastic limit, yield point, modulus of rupture; tensile tests of cement; pat tests, boiling tests; specific gravity; fineness; time of set, etc. Determination of the best proportions of cement, sand, and rock of given characters. *Two lectures and one and one-half laboratory credits, first term. Required of Seniors in Mechanical, Electrical, and Civil Engineering.* Mr. Knowles.

XVIII. Experimental Engineering d.—Hot-air engine, gas engine, steam pump, injectors, transmission dynamometers; boiler tests; complete tests of power plants; outside work on the H. P. of a stream, with tests of hydraulic power plant; outside tests of manufacturing plants, with calculations, reports, and recommendations. *Two laboratory credits, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XIX. Heating and Ventilation.—Discussion of the principles and practice of the various systems of heating and ventilating—direct and indirect, hot-air, hot-water, pressure steam, exhaust steam, vacuum systems, fans, blowers; calculation of ventilation and radiation; flues, pipes, and radiators; air troubles; central heating systems with central power plants; design of heating system for a given building. *One recitation credit, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XX₁. Machine Design.—Design of machine parts from considerations of the motions involved, strength, rigidity, and friction; design of a complete machine; calculations with design of some type of engine, starting with given requirement of H. P., speed, etc., and with an assumed theoretical indicator card. *Three laboratory credits, first term. Required of Seniors in Mechanical Engineering.* Mr. Eldred.

XX₂. Continuation of XX₁. Same requirements.

XXI. Power Plants and Power-Plant Design.—Study of the various types—as to choice, location, installation, and operation; prime movers, their accessories and auxiliaries.

Steam plants.—Study of the effects on economy, range, and reliability of simple or compound, condensing or non-condensing engines with various valve gears, throttling and cut-off governors, different boiler installations, feed-water heaters, economizers, pressure regulators, pumps, injectors, mechanical stokers, forced and induced draft, chimneys, etc.; calculations of proper sizes, powers, and strengths of machines and apparatus of the power plant; methods of improving economy. The place of the steam turbine in power-plant work.

Hydro Plants.—Discussion of the types of hydraulic machinery, their efficiency, and the particular conditions to which each is best adapted. This will be a development of the previous work in hydraulics to meet the need of the power engineer.

Gas-Producer Plants.—The different suction and pressure producers, theory, capacity, future, etc.; gas engines, from both the thermo-dynamic and the mechanical points of view. *Two lectures credits and one laboratory credit per week, first term. Required of Seniors in Mechanical Engineering. Two lecture credits per week, first term. Required of Seniors in Electrical Engineering.* Professor Wales.

XXII₁. Assigned Work.—This may be of the nature of research or of specialized study along some particular line of engineering. *Three credits per week, thruout the year. Required of Seniors in Mechanical Engineering.* Professor Wales.

XXII₂. Continuation of XXII₁. Same requirements.

XXIII. Dynamics of Machines.—Analysis of stresses, effects of inertia, balance, reciprocating parts, flywheels, design of high-speed engines and machinery. *Two recitation credits per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XXVI. Business Organization and Management.—The organization of engineering industries, and the laws and methods of business applying to them. *Three lecture credits per week, second term. Required of Seniors in Mechanical and Chemical Engineering.* Professor Wales.

English

Literature, Composition, and Rhetoric

PROFESSOR CHURCHILL, ASSISTANT PROFESSOR PECK

The English department offers subjects in literature and in rhetoric and composition, both written and oral. The required work extends over the four years. Elective subjects in literature are provided for Juniors and Seniors. Both literature and composition subjects place emphasis on the practical and the contemporary phases of the work.

The library is an important factor in the work of the department, as it contains some twelve hundred volumes of representative English and American literature.

Subjects in Literature

IV. Modern Essays.—Study of representative essays of England and America in the 19th and 20th centuries. *Three recitation credits, first term. Required of all Juniors except those in Reserve Officers' Training Corps and in Teacher-Training Course in Agriculture.*

V. Shakespeare.—A course in appreciation, including lectures on the life of Shakespeare, reading of several plays, and careful study of three plays. *Three recitation credits,, second term. Required of Seniors in Agriculture, Applied Science, Home Economics, and in Teacher-Training Course in Home Economics.*

VI. Current Literature and Composition.—A critical study of contemporary work as it appears in a periodical of the type of the *Atlantic Monthly*. Practice in writing familiar essays and short stories. *Two recitation credits thruout the year. Option for Freshmen in Home Economics.*

VII. The English Novel.—Study of the development and technique of the novel in England. *Two recitation credits, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics Courses.*

XI. American Poetry.—An appreciative reading study of American Poetry as a whole, using Stedman's "An American Anthology" as a basis for the work, followed by a brief study of modern verse in America and Europe. *Two recitation credits, first term. Elective as an extra for Juniors and Seniors in Applied Science. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics.*

XII. Contemporary Drama.—Lectures on the history and development of the drama. Study of contemporary drama of America and Europe. *Two recitation credits, first term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics Courses.*

Rhetoric and Composition

I. Rhetoric and Composition.—Outlines of rhetorical theory, study of models illustrating the various literary forms, exercises, weekly themes. *Three recitation credits, thruout the year. Required of Freshmen in all courses.*

II. Newspaper Work.—The technique of structure and style as applied to newspaper methods. Daily practice, special emphasis on editorial paragraph writing, based on the study of current events. *One recitation credit, first term. Required of Sophomores in all courses.*

III. Argumentation.—Theory and Practice. Training in the principles of brief-drawing; weekly practice in extemporaneous speaking and debating. *Two recitation credits, second term. Required of Sophomores in all courses.*

VIII. Interpretive Reading.—Training in the fundamental principles of pronunciation, articulation, emphasis, inflection, phrasing, quality, force, pitch, rhythm. Besides the ultimate practical purpose, this course is intended to give the necessary preparation for effective public speaking in the courses in debate and oratory during the Junior and Senior years. *One recitation credit, second term. Required of Sophomores in all courses for Home Economics students, first term; for all others.*

IX. Debating.—Instruction and practice in the art of debate. *Junior Students, one recitation credit, first term. Required of Juniors in Agriculture, Applied Science and Engineering. Junior students in Home Economics may elect work for an additional hour of credit.*

X. Oratorical Writing and Extemporaneous Speaking.—Critical study of representative English and American orations as models; weekly practice in extemporaneous speaking and in the technique of oratorical writing. Criticism on the construction of one long oration. *One recitation credit, first term. Required of Seniors in Agriculture, Applied Science, Engineering, and Teacher-Training Course in Agriculture.*

Geology

ASSISTANT PROFESSOR PERKINS

Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to those characteristics of rocks which are of chief importance in connection with road construction.

Subjects

I. Geology.—*Two recitation credits, second term. Required of Juniors in Civil Engineering and Sophomores in Agriculture and Applied Science, and of first-year students, Education Course, Science and Agricultural options.*

History

PRESIDENT EDWARDS, PROFESSOR CHURCHILL

I. Social, Economic, and Industrial History of the United States.—*Three recitation credits, second term. Required of all Juniors not in Reserve Officers' Training Corps.*

II. Government and Politics in the United States.—*Three recitation credits, second term. Elective.*

III. Modern European History.—*Three recitation credits, first term. Required of Sophomores in Home Economics and of first-year students in Education Course, Home Economics option.*

Home Economics

PROFESSOR BEMIS, ASSISTANT PROFESSOR PEPPARD

There are two home economics laboratories: a small building near South Hall is used for the foods, dietetics and nutrition classes. It is well lighted and ventilated and equipped for sixteen students. The clothing laboratory is housed in Davis Hall and accommodates sixteen students. The latest books for reference in home economics courses are kept in the library and are at the disposal of the students at all times.

Subjects

I₁. Garment Making.—Instruction and practice in hand and machine sewing, pattern making, adaptation of commercial patterns applied to making undergarments and simple wash dresses. The study of the development of the textile industry, manufacture of fabrics, and of woman's place in industry with reference to clothing and textiles. *Three and one-half credits, first term. Required of Freshmen in Home Economics, and in Education Course in Home Economics.*

I₂. Garment Making.—Continuation of Home Economics I₁.—*Three and one-half credits, second term. Required of Freshmen in Home Economics and in Education Course in Home Economics.*

III. Hygiene.—Presentation of the factors that make for healthy bodies and sound nerves. A readjustment of habits to meet the conditions of group and community life. *One recitation credit, first term. Required of all women, freshmen year.*

IV₁. Foods.—Sources, manufacture, and chemical composition of foods and the relation of the principles of chemistry, physics, biology, and bacteriology to the cookery processes and digestion of foods; selection and combinations of foods, their comparative nutritive and economic values and their place in the diet. *One recitation and three laboratory credits, first term. Prerequisite: Chemistry I and II. Required of all Sophomores in Home Economics.*

IV₂. Foods.—Continuation of Home Economics IV₁. *Three laboratory credits, second term. Required of all Sophomores in Home Economics.*

VI. Nutrition.—The study of digestion and metabolism under conditions of health; variations in the diet necessary in pathological conditions and dietetic treatment in certain diseases. *Two recitation and one laboratory credit, second term. Prerequisite: Home Economics VIII. Required of Seniors in Home Economics, and in Teacher-Training Course in Home Economics.*

VII. House Planning and Furnishing.—Evolution of the house, its adaptation to modern conditions, principles involved in planning, furnishing and decorating the house from the standpoint of convenience, economy, health, and art. *One recitation and one laboratory credit, second term. Required of Juniors in Home Economics.*

VIII. Dietetics.—Nutritive value of foods and the daily food requirements; dietary studies based on family budgets of varying incomes; the making of menus and preparation of meals. *Two recitation and one laboratory credit, first term. Prerequisites: Chemistry IV, Zoölogy X, Home Economics IV. Required of Juniors in Home Economics, in Teacher-Training Course in Home Economics and in Education Course, Home Economics option, second year.*

IX. Sanitation.—Study of location of the house, heating, lighting, water supply, plumbing, and care of the house with reference to health, convenience, and cost. Public sanitation as it relates to the household is considered. *Two recitation credits, first term. Required of Juniors in Home Economics, in Teacher-Training Course in Home Economics, and of second-year students in Education Course, Home Economics option.*

XII. Home Nursing.—Suitable furnishing and arrangement for the sick room; care of patient—bathing, moving, feeding, etc.; first aid and emergency measures; hygiene of infectious and contagious diseases; care of infants and children. *Two recitation credits, second term. Required of Juniors in Home Economics in Teacher-Training Course in Home Economics and of second-year students in Education Course, Home Economics option.*

XVIII₁. Dressmaking.—Consideration of quality, suitability, and cost of materials used in making simple wool and silk dresses. Adaptation of art principles in selection of designs. *Two laboratory credits, first term. Required of Sophomores in Home Economics and of second-year students in Education Course, Home Economics option. Prerequisites: Home Economics I₁ and I₂.*

XVIII₂. Continuation of XVIII₁. *One recitation and two laboratory credits, second term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics, and of second-year students in Education Course, Home Economics option.*

XXI. Home Administration.—Care of home, planning and executing daily and weekly routine for group of five or more, division of income and making of budgets; planning and serving meals on given cost, and consideration of service for simple and more formal occasions. *Three laboratory credits, first term. Required of Seniors in Home Economics, and in Teacher-Training Course in Home Economics. Prerequisite: Home Economics VIII.*

XXV. Costume Design.—A study of principles of design and their application to dress. Study of form, line and color combinations in their relation to the individual. Practice in handling and draping fine material. Study of color and textiles as related to different types of hat and the making and trimming of these types. *Three laboratory credits, second term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics. Prerequisite: XVIII₂.*

XXVI. Textiles and Clothing Economics.—Artistic and economic considerations in selection and purchase of materials for clothing and household furnishing, with emphasis on identification of textile materials, as to price, width, and weave; economic and social conditions which affect their value. Study of clothing budgets. *Two laboratory credits, first term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics. Prerequisites: Home Economics I₁ and I₂, XXIII.*

XXVII. Applied Household Mechanics.—The construction, care and use of the various pieces of machinery used in the home for heating, lighting, ventilating, cleaning, cooking and sewing. *One lecture and one laboratory credit, second term. Required of Sophomores in Home Economics, and of first-year students in Education Course, Home Economics option.*

Languages, Modern

MISS MYRICK, MISS PECK

FRENCH

I. Elementary French.—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits, thruout the year.*

II. Reading of intermediate texts.—Composition, conversation, first term; Introductory Scientific French, second term. *Three recitation credits, thruout the year.*

III. Classical and Scientific French.—*Three recitation credits, thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Advanced Scientific French.—*Three recitation credits, thruout the year. Elective for students who have completed II and III.*

GERMAN

I. Elementary German.—Grammar, dictation, conversation, reading of easy prose and poetry. *Three recitation credits, thruout the year. Required of students in Applied Science when German is not offered for entrance.*

II. Introductory Scientific German.—*Five recitation credits, second term. Required of Sophomores in Applied Science, and Chemical Engineering.*

III. Scientific German.—*Three recitation credits, thruout the year. Elective for students who have completed I and II or their equivalents.*

SPANISH

I. Elementary Spanish.—Grammar, pronunciation, reading, composition, conversation. *Three recitation credits, thruout the year.*

II. Modern Prose.—Conversation, composition, reading of modern prose with practical vocabulary. Commercial correspondence. *Three recitation credits, thruout the year.*

III. Commercial Spanish.—Reading of fac-simile business correspondence, writing of business letters, conversation. Reports in Spanish on commercial subjects and trade development. (Conducted in Spanish). *Three recitation credits thruout the year.*

Mathematics

PROFESSOR TYLER, ASSISTANT PROFESSOR BILLS

Subjects

I. College Algebra.—*Five recitation credits, nine weeks, first term. Required of Freshmen in Engineering and Applied Science and of first-year students, Education Course, Science option.* Professor Tyler, Assistant Professor Bills.

II. Trigonometry.—*Five recitation credits, nine weeks, first term. Required of all Freshmen except Home Economics students, for whom it is optional; also required of first-year students, Education Course, Science and Agricultural options.* Professor Tyler, Assistant Professor Bills.

III. Higher Algebra.—*Five recitation credits, nine weeks, first term. Required of Freshmen in Agriculture and of first-year students, Education Course, Agricultural option, and optional for students in Home Economics.* Assistant Professor Bills.

VIII. a. Trigonometry completed and Analytics.—*Five recitation credits, second term. Required of Freshmen in Engineering and of first-year students, Education Course, Science option.* Professor Tyler, Assistant Professor Bills.

VIII. b. Trigonometry completed and Elementary Analysis.—*Four recitation credits, second term. Required of Freshmen in Applied Science.* Assistant Professor Bills.

X. Calculus.—*Five recitation credits, first term. Required of Sophomores in Engineering.* Professor Tyler.

XI. Calculus (completed).—*Five recitation credits, second term. Required of Sophomores in Engineering.* Professor Tyler.

XIV. Spherical Trigonometry.—*One recitation credit, first term. Elective as an extra.*

XV. Solid Analytics.—*One recitation credit, second term. Elective as an extra.*

Military Science and Tactics

CAPTAIN DOVE

All male college students are required to take military instruction during the first two years unless excused by reason of physical disability. During this period they are enrolled in the Reserve Officers' Training Corps. During the remainder of their period in college they may continue in the military department or take physical training instead.

The primary object of the Reserve Officers' Training Corps is to qualify, by systematic and standard methods of training, young men for reserve officers of the United States Army. The system of instruction as prescribed presents to the students a standardized measure of that military training which is necessary in order to prepare them to perform intelligently the duties of commissioned officers in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers.

Under the provisions of the National Defense Act of June 3, 1916, as published in General Orders No. 49, War Department, 1916, any student who has completed two academic years of service in the Reserve Officers' Training Corps, and has been selected for further training by the president of the institution and by its professor of military science and tactics, and who has agreed in writing to continue in said Corps for the remainder of his period in college, devoting five hours per week to the prescribed military training, and who further agrees to take the prescribed camp training, may be furnished with an allowance for subsistence amounting to about 40 cents a day.

Any member of the Reserve Officers' Training Corps who has attended one or more camps during the first two years of his service in the corps, or who has attended an Army Training camp, will be given credit therefor.

Subsistence while in camp, and railroad fare to and return will be paid by the United States. Extra articles of uniform necessary for camp will also be furnished.

Upon the completion of all required work in connection with the Reserve Officers' Training Corps graduates will be commissioned as reserve second lieutenants of the Army.

When a unit of the Reserve Officers' Training Corps has been established at an institution, the Quartermaster's Corps of the Army will issue or provide one complete olive drab regulation uniform for each student undergoing instruction. It is also the policy of the War Department to issue for each unit of the R. O. T. C. the latest model rifle and equipment, in so far as the supply and the appropriations of Congress permit.

This has already been done to the extent of supplying the college with the model of 1917 rifle, the complete infantry equipment, one Browning Machine Gun, and one Browning Automatic Rifle.

Field work in Radio Telegraphy is being carried on by the signal squad of the Military Department. This work is actually done in the field, and the squads set up the apparatus and communicate with the central station at the college. At the central station students work with all types of receiving apparatus under the supervision of the Physics Department.

COAST ARTILLERY UNIT OF THE RESERVE OFFICERS' TRAINING CORPS

Plans are under way for the establishment at the college of a Coast Artillery Unit as an elective form of training for the Reserve Officers' Training Corps.

The probable program for those taking this option is as follows:

Freshman Year

Requirements the same as in other options of the R. O. T. C.—Regular non-military subjects with one hour military theory, two hours drill and one hour physical exercises per week.

Sophomore Year

Regular non-military subjects.—The mathematics and physics being enriched by practical problems from heavy artillery practice. Two hours per week in Gunnery and Orientation, replacing corresponding military credits in other branches of the R. O. T. C. Two hours per week in some form of physical training (not Drill).

Sophomore year followed by summer camp of six weeks.

Junior Year

Regular non-military subjects. Three hours special theory in heavy artillery, replacing correspondingly three hours of theory in other branches R. O. T. C, Two hours per week physical training (not Drill).

Junior year followed by summer camp of six weeks.

Senior Year

Regular non-military subjects. Same military requirements as in Junior year.

All male college students will be eligible for this option on the basis of entrance requirements and regular college work, except those taking Applied Science and Chemical Engineering. For students in these courses it will be necessary to qualify in plane surveying equivalent to regular course listed as CE I.

All members of the Coast Artillery Unit will be furnished uniforms. Those entering upon the last two years of the work, do so under contract to complete the requirements of these two years. In addition to the uniform they receive pay

amounting to about 40 cents per day during the school year. The question of pay for service in the summer camps is still undecided. It appears probable that the men will receive soldiers pay of \$1.00 per day for this service.

Subjects

I. Military Art.—Practical.—(a) *First Year*. Physical drill; Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad, Company, and Battalion close and extended order; preliminary instruction in sighting and aiming drills; gallery practice; nomenclature and care of rifle and equipment; ceremonies; manuals; bayonet combat; intrenchments; first-aid instruction; target practice. (b) *Second Year*. Same as (a), combat and collective firing in indoor ranges if possible; signaling; work with sand table. (c) *Third Year*. Duties consistent with rank as cadet officers or non-commissioned officers in connection with (a) and (b); military sketching. (d) *Fourth Year*. Same as (c). *Two exercises of one hour each, counting as one credit for each term. Required of all male Freshmen and Sophomores, and all Juniors and Seniors taking the advanced course in the Reserve Officers' Training Corps.*

II. Military Art.—Theoretical.—*First Year*. Theory of target practice, military organization; service of information; service of security; map reading; lectures on general military policy as shown by military history of the United States and military obligation of citizenship; combat (to be illustrated by small tactical exercises); Infantry Drill Regulations, to include School of the Company; camp sanitation for small commands; personal hygiene. *One recitation credit thruout the year. Required of all Freshmen.*

IV. Military Art.—Theoretical.—*Second Year*. Infantry Drill Regulations, to include School of Battalion and Combat; Small Arms Firing Regulations; lectures as in II; map reading; marches and camps; camp sanitation and camp expedients; military history (recent); service of security and information (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping). *One recitation credit thruout the year. Required of all Sophomores.*

V. Military Art.—Theoretical.—*Third Year*. Minor tactics; field orders; map maneuvers and problems; company administration (papers and returns); property accountability; method of obtaining supplies and equipment; military history; elements of international law. *Three recitation credits thruout the year. Required of all Juniors in the Reserve Officers' Training Corps.*

VI. Military Art.—Theoretical.—*Fourth Year*. Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings; international relations of America; gradual growth of the principles of international law embodied in American diplomacy, legislation, and treaties; psychology of war; general principles of strategy only, planned to show the intimate relationship between the statesman and the soldier; military history and policy; the rifle in war. *Three recitation credits thruout the year. Required of all Seniors in the Reserve Officers' Training Corps.*

Music

ASSISTANT PROFESSOR PECK

I. Elementary Harmony and History of Music.—Two hours a week are devoted to the study of harmony including musical notation, formation of triads, chords of the seventh, invention of melodies and their harmonization, ear training, elementary form. The third hour is devoted to the history of music. Lectures, assigned readings, reports, musical illustrations. *Three recitation credits thruout the year.*

II. Harmony and Appreciation.—The work in harmony is a continuation of subject I, leading to elementary original work in composition. The study of the appreciation of music is intended to develop musical perception or the ability to listen to good music intelligently. Muscial theory, musical forms, study of the lives and works of the greatest composers and their relation to the development of music. *Three recitation credits, thruout the year. Open to students who have completed I.*

III. The Oratorio and the Symphony.—*First Term.*—A study of the development of the oratorio as a form of music. Careful analysis of one oratorio. Discussion of others.

Second Term.—A historical subject tracing the development of the symphony from the time of Haydn to the present. It is urged that students taking this subject be able to sing and play simple music. *Two recitation credits thruout the year. Open to students who have completed I.*

IV. Masters in Music.—A detailed study of the works of certain of the greatest composers. Different ones may be chosen different years. Lectures, analyses, readings, and critical papers. *Two recitation credits, thruout the year. Open to students who have completed I and either II or III.*

Physics

PROFESSOR DICKINSON, ASSISTANT PROFESSOR COGGINS

Physics is regarded as a fundamental science, a mastery of which is essential to success in engineering or in any calling involving the application of scientific methods and processes. Therefore emphasis is placed upon the practical applications of the principles involved, not only for the purpose of affording preparation for future work, but with the idea of stimulating the student to an interest in his professional work.

At the same time, some effort is made to present the subject from the standpoint of a pure science, and to instill in the student a respect for scientific methods, and to prepare him for advanced work in research and investigation. Advanced mathematics is employed,

wherever its use is deemed necessary for a rigorous and complete development of the subject.

Instruction is given in both class-room and laboratory, the two methods being closely correlated. The department is well equipped with high grade apparatus, much of which has been recently imported. In mechanics, special attention is given to problems involved in the application and transmission of power.

In the laboratory of heat measurements, the problems involved in the transformation of heat into useful energy are strongly emphasized.

In light, the department is able to carry on work of the usual collegé grade, being well equipped with high grade photometers, spectrometers, interferometers, and refractometers.

The laboratory of electrical measurements is particularly well equipped for the carrying on of advanced work.

Subjects

I. Descriptive Physics.—Designed for students in Agriculture and Home Economics. The subject furnishes an excellent foundation for further work in physics. *Five recitation credits, second term. Required of Sophomores in Agriculture and Home Economics, and of second-year students, Education Course Agricultural option.*

II. General Physics.—A mathematical treatment of the subject, in which a knowledge of elementary physics is presupposed. *Four recitation credits, thruout the year. Required of all Sophomores in Engineering and Applied Science, and of second-year students, Education Course, Science option.*

III. Laboratory Physics.—A series of physical measurements intended to teach students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits, thruout the year. Required of Sophomores in Engineering and Applied Science, and of second-year students, Education Course, Scientific option.*

V. Electrical Measurements.—Direct-current measurements, resistance, potential, current, magnetic properties of iron and steel, calibration of direct-current instruments. *One and one-half laboratory credits, first term. Required of Juniors in Electrical Engineering.*

VI. Principles of Illumination.—A study of different sources of light, photometrical measurements, and the principles of illuminating engineering. *One recitation credit and one and one-half laboratory credits, first term. Required of Juniors in Electrical Engineering.*

Physical Education

MR. WALKER

The aim of the department of physical education is to give those students taking work in the department such scientific physical training as to best develop a normal body. Every student in the institution is required to take at least two hours work in Practical Military Art (see pp. 85-86) or physical training.

Recent events have shown the great need of better physical development among the youth of our country, together with more scientific and thorough application of the methods of physical education in our American colleges. During the past year, this college has required practically every student to take regularly some form of physical training, thus causing the development of a better physical body as well as mental improvement.

The following lines of activity will be conducted:

Football.—Commencing with the opening of the College year in September and continuing until the latter part of November and during the last six weeks of the college year, work will be conducted in this sport. Aside from the Varsity team, class teams will be developed. All male students are urged to take part in this work.

Basketball.—Following the close of the football training in November, basketball work will be commenced and will continue until the latter part of March. Varsity and class teams will be developed as in football.

Baseball.—Work in baseball is commenced with practice in the gymnasium the middle of February and will continue with outdoor work when weather permits until the end of the college year. Varsity and group teams will be developed.

Boxing.—This form of exercise requires a rigorous course in calisthenics to develop and strengthen the entire physique. In addition to which training is given in blocking, side-stepping, ducking and leading. Students are not allowed to strike blows until after this training. Classes begin at the opening of the school year and continue until the end of the year.

Cross Country.—Cross country work will be started in the Fall and continued until the Thanksgiving recess. The country surrounding the college is ideal for this line of work, which should prove of interest to many students.

Track.—Training in track work will begin on the board running track after the Christmas holidays and will be continued on the cinder track in the spring as weather permits. Some form of track athletics should be participated in by all male students.

Gymnasium Work.—A complete course in calisthenics will be offered for all students desiring this form of exercise. These courses will be so arranged as to allow all students of the institution to take at least two hours per week thruout the year in the gymnasium.

Psychology and Education

DR. CARROLL, PROFESSOR BIRD, PROFESSOR WELLS

I. General History of Education.—Study of educational theory and practice from the historical point of view. Following the study of the general history of education the last third of the term will be given to the special history of the educational movements in connection with the line of work in which the student is specializing under the following heads:

- a. Agricultural Education (see Vocational Education I).
- b. Home Economics (to be arranged).
- c. Science (to be arranged).

Three recitation credits, first twelve weeks, second term. Required in Applied Science and Teacher-Training Courses.

II. Principles of Education.—Study of the principles and methods of teaching and administration. *Three recitation credits, first term. Required in Applied Science and in Teacher-Training Courses.*

III. Rhode Island Education.—A study of the educational movement in Rhode Island, together with the laws of the State in relation to the schools. *Three recitation credits, second term. Required in Applied Science, and in Teacher-Training Courses.*

IV. General Psychology.—Structure and functions of mental life; simple experiments. *Three recitation credits, first term. Required in Applied Science, Home Economics and Teacher-Training Courses.*

Vocational Education

W. T. SPANTON, ETHEL A. WRIGHT

The object of the subjects offered in Vocational Education is to provide the necessary professional training for students in the Departments of Agriculture and Home Economics who are preparing themselves to teach these vocational subjects in the schools of the State.

Subjects

I. History of Agricultural Education.—A survey of the rise and development of Elementary, Secondary and Collegiate Agricultural Education thruout the United States. *Three recitation credits, last six weeks, second term, Junior year.* For the work of the first twelve weeks of the term, see Psy. and Ed. I. *Required of Students in Agricultural Teacher-Training Course.* Mr. Spanton.

II. Practice Teaching Agriculture.—Practical class-room experience in the conducting of recitations and laboratory work in Secondary Agriculture under supervision. *Three recitation credits, first term, Senior year. Required of Students in Agricultural Teacher-Training Course.* Mr. Spanton.

III. Practice Teaching Agriculture.—Continuation of Practice Teaching II, *second term, Senior year. Three recitation credits the term. Required of Students in Agricultural Teacher-Training Course.* Mr. Spanton.

IV. Special Methods in Agriculture.—A study of the Smith-Hughes Law in so far as it relates to Vocational Agricultural Education. Preparation and presentation of the subject matter in the class-room and laboratory. Arranging courses of study, preparation of lesson plans, conducting of field trips and supervision of Home Project Work. *Three recitation credits, second term, Senior year. Required of Students in Agricultural Teacher-Training Course.* Mr. Spanton.

V. Teaching Home Economics.—A study of methods, curricula, and equipment, and the making of lesson plans; observations and criticisms followed by supervised teaching. *One recitation and one laboratory credit, first term. Elective for Seniors in Home Economics, and required of Seniors in Teacher-Training Course Home Economics option.* Miss Wright.

Zoölogy

PROFESSOR BARLOW

The work in this department is designed to meet the needs of two classes of students: those who are interested in the economic aspect of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic aspects of the different orders. Much time is given to entomology, and in this subject special attention is given to injurious forms. For those who are to be teachers, a thoro training is given in the morphology and classification of animals as a preparation for the more special subjects that follow. In these, attention is directed to the habits and relations of animals, which are studied both in the field and in the laboratory.

The laboratory is equipped with a series of charts, valuable models, and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about one hundred cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes. The necessary instruments for laboratory work can be procured at small cost at the college store.

Subjects

I. Invertebrate Zoölogy.—A subject in the morphology and classification of invertebrates. *Given in alternate years; next given in 1920. One recitation and three laboratory credits, second term. Option for Juniors and Seniors in Applied Science. Required of second-year students in Education Course, Science option.*

II. General Zoölogy.—Lectures and field work on the distribution and habits of animals. Special studies of local areas and typical animal communities. *Given in alternate years; next given in 1920. One and one-half laboratory credits, second term. Option for Seniors in Applied Science.*

IV. Economic Entomology.—*One laboratory credit and three recitation credits, second term. Given in alternate years; next given in 1921. Option for Juniors in Agriculture and Applied Science.*

V. General Entomology.—*Two laboratory credits and one recitation credit, first term; two laboratory and two recitation credits, second term. Elective for Juniors and Seniors in Applied Science.*

VI. Systematic Entomology.—*Three or five laboratory credits per week, throughout the year. Elective for those who have taken or are taking Zoölogy V.*

VIII. a. Histology.—The usual methods of imbedding and sectioning tissues and the study of the principal organs by these methods. *Three laboratory credits, first term. Option for Juniors and Seniors in Applied Science and Home Economics. Elective in Teacher-Training Courses. Given in alternate years; next given in 1920.*

VIII. b. Embryology.—Laboratory and text-book study of the development of vertebrates. *Two recitation credits and one laboratory credit, second term. Given in alternate years; next given in 1921. Required of second-year students, Education Course, Home Economics option. Option for Seniors in Applied Science.*

IX. Bird Life.—Field studies of native birds. *One and one-half laboratory credits, second term. Elective.*

X. a. General Zoölogy. Introductory Course. Structure and physiology of type forms. *Two recitation and two laboratory credits, first term. Required of Freshmen in Home Economics, of first-year students in Education Course. Home Economics and Science options; of second-year students in Education Course, Agricultural option, and of Sophomores in Agriculture and Applied Science.*

X. b. Anatomy and Physiology.—The structure of higher vertebrates and human physiology. *Two recitation and two laboratory credits, second term. Required of Freshmen in Home Economics, and of first-year students in Education Course, Home Economics and Science options, of second-year students, Agricultural option and of Sophomores in Agriculture and Applied Science.*

A. Elementary Economic Zoölogy.—Injurious insects are chiefly studied. *Two recitation credits throughout the year, Short Course in Agriculture.*

Student Organizations

Agricultural Club

ALBERT A. THORNTON.....	President
HERMAN B. HARRINGTON.....	Vice-President
ALBERT P. SISSON.....	Treasurer
CHARLES D. DALZELL.....	Secretary

Chemical Society

JOHN J. DOWLING.....	President
LEANDER B. SPENCER.....	Vice-President
EDWARD H. GAMBLE.....	Secretary

Debating Society

H. B. SMITH.....	President
ESTHER PETERSON.....	Vice-President
AMY A. WHITFORD.....	Secretary-Treasurer

The Beacon

FREDERIC R. BRIGGS.....	Editor-in-Chief
HOWARD B. SMITH.....	Managing Editor
WILLIAM B. CARNIE.....	Business Manager

Men's Student Council

JOHN J. DOWLING.....	President
LEANDER B. SPENCER.....	Vice-President
FREDERIC R. BRIGGS.....	Secretary

Young Men's Christian Association

CHARLES H. WALES.....	President
MILTON W. GARDINER.....	Vice-President
DANIEL O. CARGILL.....	Secretary-Treasurer

Young Women's Christian Association

ESTHER PETERSON.....	President
LOUISE DAMON.....	Vice-President
FLORA M. ANDERSON.....	Secretary

Women's Student Council

AMY WHITFORD.....	President
ELIZABETH STILLMAN.....	Treasurer
FLORA ANDERSON	} Junior Members
LUCILE KOHLBERG	
MARTHA SMITH	} Sophomore Members
LILLIAN SMITH	

Girls' Glee Club

HELEN E. PECK.....	Leader
ELSIE THACKRAY.....	Pianist
LOUISE DAMON.....	Treasurer
MERILLA IRONS.....	Registrar

BATTALION ORGANIZATION, MAY 1, 1919

R. O. T. C.

 Commandant

WILBUR E. DOVE, Captain United States Army, Retired

CADET OFFICERS AND NON-COMMISSIONED OFFICERS

Field and Staff

Major	JOHN W. CRUICKSHANK, 1st Lt. Inf. U. S. R.
Adjutant	CLARENCE E. NORDQUIST, 2nd Lt. F. A., U. S. R.
Supply Officer	JOHN J. CONDON, 2nd Lt. F. A., U. S. R.
Bayonet Instructor	LESLIE S. FLETCHER, 2nd Lt. Inf., U. S. R.
Sergeant-Major	EDWARD L. CARPENTER

Company "A"

Captain	RALPH E. BRIERLEY, 2nd Lt. Inf., U. S. R.
First Lieutenant	FREDERICK J. FLYNN
Second Lieutenant	WILLIAM J. WILLIAMSON
First Sergeant	VINAL N. HASTINGS
Sergeant	BERNARD G. CONNOLLY
Sergeant	HENRY F. BAACKE
Corporal	ISAAC T. SHERMAN
Corporal	WALTER W. MOORE
Corporal	OWEN A. NILES
Corporal	WILLARD H. FORD
Corporal	FRANCIS P. BRIGHTMAN

Company "B"

Captain	MILTON W. GARDINER, 2nd Lt., M. G., U. S. R.
First Lieutenant	FRANCIS J. JOHNSON
Second Lieutenant	HAROLD E. WHITAKER
First Sergeant	JOHN P. SNYDER
Sergeant	GORDON A. ADAMS
Sergeant	NATHAN TORGAN
Sergeant	CHARLES H. WALES
Corporal	LOUIS STILLMAN
Corporal	THOMAS P. REGAN
Corporal	RAYMOND C. LAPERCHE
Corporal	ARTHUR J. TUZIO
Corporal	JOSEPH E. O'NEIL
Corporal	ANGELO ZERBARIN

Prizes and Honors

PHI KAPPA PHI

In the spring of 1913 was organized at the Rhode Island State College a chapter of Phi Kappa Phi, a national scholarship society, whose purpose, as stated in the preamble of the constitution, is "to provide a Fraternity, dedicated to the Unity and Democracy of Education, and open to honor graduates of all departments of American Universities and Colleges."

The national society was founded at the University of Maine, in 1897. Since then, the number of chapters has increased to fourteen, in the following states, respectively: Alabama, Delaware, Florida, Georgia, Iowa, Kansas, Maine, Massachusetts, Nebraska, Nevada, North Dakota, Pennsylvania, Rhode Island, Tennessee.

THE BURCHARD CUP

In 1912 the Honorable Roswell B. Burchard presented to the college a handsome silver cup to be used as a fraternity scholarship trophy. Each year the fraternity or other organized group of students whose average scholarship grade stands highest, wins the honor of having its name inscribed on the cup. When any fraternity has achieved this distinction for three consecutive years, it thereby secures permanent ownership of the cup.

Honors Awarded Commencement Day, April 28, 1918

FINAL HONORS FOR FOUR YEARS

Joseph Wansker,	Hannah Amelia Stillman,
Dorothy Estelle Haskell,	James Joseph Devine,
	Ruth Westlake Chandler.

SENIOR HONORS

Dorothy Estelle Haskell,
Hannah Amelia Stillman,
Daniel Joseph Lynch,
Nelson Everett Blake,
James Joseph Devine,
Charles Elwyn Lermond.

SOPHOMORE HONORS

Samuel Allen McKee,
Esther Wilhelmina Peterson,
Whitney Eastman Green,
Elizabeth Stillman,
Amy Ann Whitford,
Albert Peckham Sisson,
Herbert Elmer Spink.

JUNIOR HONORS

Daniel Olney Cargill,
James Albert Mitchell,
Priscilla DaCosta Smith,
Albert Angell Thornton,
Edward Leroy Carpenter.

FRESHMAN HONORS

Joseph Edward O'Neill,
Harold James Baker,
George Hazen Davis,
Charles Howard Wales,
Anthony Nicholas Mitchell,
Pasqualino Martelli.

Degrees Conferred in 1918

Bachelor of Science

Henry Barton, Jr.,	Esther Lee Kinney,
Nelson Everett Blake,	Charles Elwyn Lermond,
Lorne Atwood Cameron,	Daniel Joseph Lynch, Jr.,
Ruth Westlake Chandler,	Arthur Henry Frederick Meyer,
Sarah Elizabeth Coyne,	Raymond Alexander Spargo,
James Joseph Devine,	Hannah Amelia Stillman,
Irma Rathbun Edmiston,	Albert Stone,
William Ellis Gillis,	Henry Richard Strand,
Lester Davis Groves,	Milton Torgan,
Charles William Haggerty,	Joseph Wansker.
Dorothy Estelle Haskell,	

Students

Graduates

Caldwell, Dorothy Walcott (M. S., R. I. S. C., 1914).....	Kingston
Tibbetts, Helena (B. S., Simmons College, 1918).....	Kingston

Seniors

Burgess, Wayland McColley, Chem. Eng.	North Scituate
Cargill, Daniel Olney, Civ. Eng.	Valley Falls
Carpenter, Edward Leroy, Mech. Eng.	Peace Dale
Carpenter, Philip Martin, Elec. Eng.	Peace Dale
Creedon, Michael Vincent, Mech. Eng.	Brockton, Mass.
Dalzell, Charles Davies, Agr.	South Boston, Mass.
Dowling, John Joseph, Chem. Eng.	Providence
Fairbanks, George Henry, Elec. Eng.	Central Falls.
Gamble, Edward Henry, Chem. Eng.	Pawtuxet
Gardner, Anna Peckham, Home Econ.	Saunderstown
Harrington, Herman Battey, Agr.	Providence
Hildreth, Charles Tew, Elec. Eng.	Newport
Holley, Arthur Tucker, Agr.	Wakefield
Irons, Merilla Althea, Home Econ.	North Scituate
Keegan, Leslie Arthur, Agr.	Providence
Kinney, Helen Wells, Home Econ.	Kingston
Marx, Howard Earle, Civ. Eng.	Providence
Mitchell, James Albert, Elec. Eng.	Oakland
Murphy, James Aloysius, Chem. Econ.	Woonsocket
Murray, Ruth Goodwin, Home Econ.	Stamford, Conn
Nichols, Ruhamah Robinson, Home Econ.	Slocum
O'Brien, Charles Francis, Mech. Eng.	Shelburne Falls, Mass.
Peterson, Thurston Waldemar, Mech. Eng.	Pawtucket
Shippee, Florence Louise, Home Econ.	Arlington
Smith, Priscilla DaCosta, Home Econ.	Woonsocket
Spencer, Leander Burnside, Jr., Chem. Eng.	East Greenwich
Sullivan, Charles McManus, Chem. Eng.	Providence
Thornton, Albert Angell, Agr.	Johnston
Walsh, James Russell, Mech. Eng.	Fall River, Mass.
Waugh, George Lincoln, Agr.	Lonsdale
Wells, Lester Earl, Elec. Eng.	Norwood
Young, Margera Lenore, Home Econ.	Westerly

Juniors

Ashcroft, Isabella, Home Econ.	Pawtucket
Baker, Louise, Home Econ.	Pawtucket
Beasley, Dorald Dewey, Chem. Eng.	Woonsocket
Biggs, Francis Lincoln, Mech. Eng.	Providence
Brierley, Ralph Ernest, Chem. Eng.	Kingston
Briggs, Frederic Robinson, Agr.	Hartford, Conn.
Call, Roy Porter, Appl. Sci.	Lynn, Mass.
Campbell, Emily Catherine, Home Econ.	Newport
Caplan, Israel, Appl. Sci.	Providence
Carnie, William Brown, Elec. Eng.	Woonsocket
Clarke, Horace Wilbur, Mech. Eng.	Providence
Condon, John Jerome, Chem. Eng.	Bristol
Cruikshank, John William, Civ. Eng.	Providence
Damon, Louise Elmore, Home Econ.	Kingston
Edwards, Mildred Elizabeth, Home Econ.	Kingston
Greene, Whitney Eastman, Mech. Eng.	Kingston
Haslam, Arthur Edmond, Agr.	Providence
Hillard, Paul Noyes, Mech. Eng.	Westerly
Holley, Charles Potter, Mech. Eng.	Kingston
Holmes, John Foster, Agr.	Needham, Mass.
Hudson, Albert Sprague, Agr.	Harris
Kwasha, Leonard James, Chem. Eng.	Providence
Malloy, George Joseph, Mech. Eng.	North Easton, Mass.
Mason, Charles Everett, Agr.	Bristol
Murphy, Maurice Vincent, Mech. Eng.	Brockton, Mass.
Newman, Hyman Leo, Chem. Eng.	Providence
Nordquist, Clarence Edward, Mech. Eng.	Elmwood
Northup, Kenneth LeRoy, Elec. Eng.	Kingston
Papalia, Philip Dewey, Appl. Sci.	Westerly
Peterson, Esther Wilhelmina, Home Econ.	Westerly
Pihl, Roland Taylor, Mech. Eng.	Pawtucket
Sisson, Albert Peckham, Agr.	Little Compton
Smith, Howard Bucklin, Appl. Sci.	Providence
Spink, Herbert Elmer, Civ. Eng.	Davisville
Stillman, Elizabeth, Home Econ.	Pawtucket
Sweetland, Sherburne Pride, Elec. Eng.	Rumford
Thackray, Elsie Law, Home Econ.	Pawtucket
Veneziale, Anthony, Civ. Eng.	Providence
Whitford, Ada Elizabeth, Home Econ.	Wakefield
Whitford, Amy Ann, Home Econ.	Wakefield
Whyte, Arthur John, Agr.	North Easton, Mass.
Wiley, John Douglass, Agr.	Pawtucket
Wittman, Victor Simon, Agr.	Providence

Sophomores

Anderson, Flora McPherson, Appl. Sci.	Newport
Baacke, Henry Frederick, Appl. Sci.	Arlington
Baker, Harold James Hall, Agr.	Westerly
Bloxham, Harold Carlton, Chem. Eng.	Pawtucket
Bogosian, Harry Der, Civ. Eng.	Providence
Brightman, Francis Pierce, Elec. Eng.	Hopkinton
Burdick, Carl Amos, Elec. Eng.	Watch Hill
Campbell, Mary Catherine, Home Econ.	Providence
Carr, Rose Mary, Appl. Sci.	Providence
Connolly, Bernard Ambrose, Elec. Eng.	Brockton, Mass.
Copeland, Everett Adams, Elec. Eng.	Edgewood
Davis, Elizabeth Edith, Home Econ.	Providence
Deery, Edwin Marshall, Agr.	Boston, Mass.
Eldredge, Alice May, Home Econ.	Greenville
Ford, Willard Harding, Civ. Eng.	Avon, Mass.
Gardiner, Milton Warren, Civ. Eng.	Saylesville
Gerstle, Gladys Darling, Home Econ.	Woonsocket
Holleran, Joseph Edward, Mech. Eng.	Roslindeale, Mass.
Holley, Albert Henry, Chem. Eng.	Providence
Hughes, Bertha Isabelle, Appl. Sci.	Providence
Kaufman, Max, Appl. Sci.	Providence
Kohlberg, Esther Lucile, Home Econ.	Providence
La Perche, Raymond Charles, Chem. Eng.	Providence
Levy, Samuel Joseph, Civ. Eng.	Providence
Martelli, Pasqualino, Civ. Eng.	Essex, Conn.
Messerlian, Leon John, Chem. Eng.	Providence
Moore, Walter Webster, Agr.	Providence
Nathanson, Charles, Appl. Sci.	Central Falls
Niles, Owen Albert, Elec. Eng.	Wyoming
O'Neill, Joseph Edward, Civ. Eng.	Brockton, Mass.
Palmer, Earl Geer, Elec. Eng.	Hope Valley
Peckham, Joseph Wallace, Elec. Eng.	Aquidneck
Pezzullo, Rocco, Appl. Sci.	Providence
Regan, Thomas Patrick, Civ. Eng.	Providence
Seabury, Douglas Beveridge, Agr.	Tiverton
Sheehan, Irene May, Home Econ.	Central Falls
Sherman, Isaac Thornton, Agr.	Newport
Smith, Isaac Willard, Appl. Sci.	West Barrington
Smith, Waldo Albert, Agr.	Slocum
Taft, Richard Christie, Mech. Eng.	Brockton, Mass.
Torgan, Nathan, Jr., Elec. Eng.	Providence
Tuzio, Arthur Joseph, Civ. Eng.	Providence
Wales, Charles Howard, Mech. Eng.	Haverhill, Mass.
Wheeler, Katherine Harriet, Home Econ.	Providence
Whitaker, Harold Earl, Agr.	East Providence
Williamson, William Joseph, Elec. Eng.	Pawtucket

Wilmot, William Earl, Chem. Eng.	Wickford
Zerbarini, Angelo Joseph, Elec. Eng.	Westerly

Freshman

Adams, Arlo Gordon, Appl. Sci.	Central Falls
Adams, Grace Louise, Appl. Sci.	East Providence
Allen, Alvan Jason, Eng.	Providence
Anderson, Arvid Simmons, Eng.	Swampscott, Mass.
Anderson, Robert Wilcox, Eng.	Pawtuxet
Antulonis, William Joseph, Eng.	Bridgewater, Mass.
Bander, Abraham, Appl. Sci.	Providence
Barton, Alfred Carr, Jr., Eng.	Warren
Brown, Lawrence Linwood, Eng.	Carolina
Brown, Robert, Eng.	Providence
Byrnes, Joseph Bernard, Eng.	Providence
Campbell, Ernest Alan, Eng.	Providence
Carlton, Marshall Gilbert, Jr., Agr.	East Providence
Casey, Richard Grant, Eng.	Bridgewater, Mass.
Catanzaro, Joseph, Jr., Appl. Sci.	Providence
Child, Everett Spencer, Eng.	Barrington
Churchill, Irving Lester, Appl. Sci.	Kingston
Clauss, Eugene Stanley, Agr.	Providence
Coker, Edwin Harold, Eng.	Providence
Corr, Elizabeth Eloise, Home Econ.	East Greenwich
Davis, Jennie Libby, Home Econ.	Providence
Dean, Reginald Langworthy, Eng.	Westerly
Deuchar, Harry, Eng.	Brockton, Mass.
Dobridnia, John Francis, Eng.	Westerly
Donegan, John Martin, Eng.	Providence
Donnelly, Austin Joseph, Eng.	Providence
Earle, Marsden Perry, Eng.	Cranston
Ellis, Lester Joseph, Eng.	Brockton, Mass.
Emmons, Alfred Joseph, Appl. Sci.	Providence
Ethier, Charles Owen, Agr.	Centredale
Famiglietti, Albert Mitchell, Eng.	Providence
Farnham, Raymond Ellsworth, Eng.	Providence
Farnsworth, Donald Fay, Eng.	Providence
Fessenden, Helen Stewart, Home Econ.	Phenix
Fischer, Arthur Herman, Eng.	Providence
Fletcher, Leslie Seekell, Appl. Sci.	Providence
Flynn, Frederick John, Eng.	Woonsocket
Ford, Earle Francis, Eng.	Providence
Foster, Benjamin Norton, Eng.	Auburn
Gardner, Charles Sidney, Eng.	Brockton, Mass.
Gencarello, Angelo Mario, Eng.	Westerly
Gillies, Robert Strout, App. Sci.	Wakefield
Gillis, Watson Clarence, Eng.	Providence
Godfrey, Edward Louis, Eng.	Providence

Goldstein, Sigmund, Eng.	Providence
Grant, Herbert Edward, Agr.	Barrington
Greene, James Francis, Eng.	Woonsocket
Grossman, Saul Sidney, Eng.	Providence
Hackett, Everett Proctor, Eng.	Providence
Haines, John Lloyd, Eng.	Bristol
Hammarlund, Arthur Norman, Appl. Sci.	East Providence
Hammett, Betty Westall, Home Econ.	Newport
Harrington, Gordon Leslie, Eng.	Woodville
Harrington, Helen Priscilla, Home Econ.	Providence
Harrington, William Russell, Eng.	Providence
Hastings, Vinal Norberg, Eng.	Dorchester, Mass.
Haupt, Charlotte May, Home Econ.	Providence
Hobbs, Howard Alfred, Appl. Sci.	East Providence
Holburn, Albert Edward, Eng.	Pawtucket
Holden, James Hamer, Eng.	Hartford, Conn.
Howarth, Albert Alexander, Eng.	Providence
Howland, John Calder, Eng.	Warren
Hoxsie, Ruby Arden, Home Econ.	Canonchet
Ingraham, George Ellery, Jr., Eng.	Bristol
Johnson, Oscar Sigfried, Appl. Sci.	Providence
Jordan, James Chester, Agr.	Arlington
Kinder, Joseph Church, Eng.	Bristol
Kinne, Norma Doris, Home Econ.	East Greenwich
Lafleur, Leo Henry, Appl. Sci.	Warren
Levine, Sidney Joseph, Appl. Sci.	Providence
Levy, William Dittrich, Appl. Sci.	Peace Dale
Loughran, Thomas William, Eng.	Natick
Lucey, Richard Alphonsus, Eng.	Brockton, Mass.
Lyons, Jeremiah Patrick, Eng.	New London, Conn.
Manning, Atwell Mowry, Eng.	Riverside
Marshall, Clarence Fuller, Eng.	Providence
Martin, Harold Edward, Eng.	Georgiaville
Maynard, George Joseph, Eng.	Providence
McDonald, John James, Appl. Sci.	East Providence
Mooney, Grace Ethel, Home Econ.	Providence
Moorhouse, George Sydney Redvers, Agr.	Westerly
Morehouse, Wade Allen, Eng.	Providence
Mosher, Clifford Hollis, Eng.	Auburn
Mott, Karl Ernest, Eng.	Providence
Mowry, Sigsbee Dewey, Eng.	Providence
Murray, Dorothy Louise, Home Econ.	Saylesville
Nichols, Chester Raymond, Appl. Sci.	Woonsocket
Nye, John Fremont, Eng.	Westerly
Orchoff, Jacob, Eng.	Providence
Pastorini, Louis Eugene, Eng.	Brockton, Mass.
Pope, Wallace Irving, Agr.	Providence
Potter, Grant Hamblett, Eng.	Providence

Prinz, Julius Cæsar, Eng.	Newport
Quigley, Daniel Mark, Appl. Sci.	Peace Dale
Railton, William Aloysius, Eng.	Valley Falls
Reed, John Hamilton, Agr.	Providence
Regerster, Isabel Allen, Home Econ.	Providence
Rhodes, Frederick Miller, Jr., Eng.	Providence
Rhodes, Lyndon Russell, Agr.	Edgewood
Roegner, George Elmer, Eng.	Providence
Rondo, Anthony, Eng.	Providence
Scorpio, Angelo, Appl. Sci.	Providence
Serbst, Henry Francis, Jr., Eng.	Bristol
Siegal, Sonner, Eng.	Providence
Simas, William Harvey, Appl. Sci.	East Providence
Smith, Harold Morey, Agr.	Woonsocket
Smith, Lillian Gladys, Home Econ.	Providence
Smith, Martha Stedman, Home Econ.	Newport
Smith, Raymond Ross, Eng.	Providence
Snyder, John Philip, Eng.	Providence
Stark, William Henry, Eng.	Providence
Stillman, Louis, Eng.	Providence
Sullivan, Maurice Joseph, Eng.	New London, Conn.
Tabor, Helen Louise, Home Econ.	Apponaug
Tew, Mary Gladys, Home Econ.	Phenix
Titchener, Frederick Herman, Agr.	Providence
Totman, Frank Howard, Eng.	Providence
Trudell, Edward Paul, Eng.	Bristol
Turner, Everett Edgar, Eng.	Brockton, Mass.
Turner, Frederick Allen, Jr., Eng.	Riverside
Vreeland, Milton Leslie, Agr.	Providence
Wade, Senior, Agr.	Woonsocket
Watson, Alma Linwood Barlow, Home Econ.	Providence
Wood, George William, Eng.	Providence
Yarvots, Evart, Eng.	New London, Conn.

Irregular

Johnson, Francis Jones, Eng.	Barrington Centre
Kern, Eugenie Marie, Home Econ.	Providence
O'Brien, James, Appl. Sci.	Woonsocket
Swahn, John Axel	Woonsocket
Sullivan, Edward Joseph, Appl. Sci.	Providence

Students' Army Training Corps

Allen, Alvan Jason	Providence
Amanna, William	Bristol
Anderson, Carl Axel	Providence
Angell, Fred E.	Ashton
Antulonis, William Joseph	Bridgewater, Mass.

Arnold, Walter Bennett.....	Saylesville
Ashworth, Lawrence Edward.....	Providence
Aurelio, Albert.....	Providence
Baacke, Henry Frederick.....	Arlington
Bainton, Earl Percival.....	Providence
Baker, Harold James.....	Westerly
Bander, Abraham.....	Providence
Bannister, Charles Augustus.....	Wakefield
Barton, Alfred Carr, Jr.....	Warren
Battel, Leo Joseph.....	Woonsocket
Bearse, Charles Inman.....	Providence
Beasley, Dorald Dewey.....	Woonsocket
Bell, William Clarke.....	Wakefield
Biggs, Francis Lincoln.....	Providence
Briggs, Frederic Robinson.....	Hartford, Conn.
Brightman, Francis Pierce.....	Hopkinton
Brollini, Venanzio.....	Providence
Brown, Frederic Spencer.....	Woonsocket
Brown, Lawrence Linwood.....	Carolina
Brown, Robert.....	Providence
Burgess, Wayland McColley.....	North Scituate
Buzzell, Harry Towerson, Jr.....	Providence
Byrnes, Joseph Bernard.....	Providence
Byron, John Francis, Jr.....	Providence
Campbell, Ernest Alan.....	Providence
Cargill, Daniel Olney.....	Valley Falls
Carlton, Marshall Gilbert, Jr.....	East Providence
Carnie, William Brown.....	Woonsocket
Carpenter, Edward Leroy.....	Peace Dale
Carpenter, Philip Martin.....	Peace Dale
Carpenter, William Raymond.....	Phenix
Caruolo, Armando.....	Providence
Catanzaro, Joseph, Jr.....	Providence
Champion, Ernest G.....	Carolina
Child, Everett Spencer.....	Barrington
Clabby, William, Jr.....	Providence
Clarke, Horace Wilbur.....	Providence
Clinton, Wilfred Thomas.....	Providence
Coleman, John Francis.....	Providence
Conealy, John Francis.....	Blackstone, Mass
Conefrey, Joseph Barlow.....	Brockton, Mass.
Connolly, Bernard Ambrose.....	Brockton, Mass.
Cook, Milton.....	Cumberland Hill
Copeland, Everett Adams.....	Edgewood
Cory, Harold Read.....	Providence
Costanzo, Ettore.....	Providence
Cousineau, Arthur Alfred.....	Providence
Cox, Howard Ernest.....	East Providence

Coyle, Frank Thomas	Providence
Crawford, Joseph Henry	Providence
Creedon, Michael Vincent	Brockton, Mass.
Creegan, William Leo	Providence
Cummings, Francis Lawrence	Auburn
Dailey, Jeremiah Arthur	Providence
D'Atri, Vincent Anthony	Providence
Davis, Edwin Baker	Edgewood
Davis, Fred Sheldon	Providence
Davis, George Hazen	Fall River, Mass.
Davis, Roy John	Saylesville
Devine, John Joseph	Providence
De Matteo, Rocco	Providence
Dobridnia, John Francis	Westerly
Donegan, John Martin	Providence
Donnelly, Austin Joseph	Providence
Dorsey, Andrew Aloysius	Providence
Duffy, Francis J.	Providence
Durkin, Thomas Francis	Providence
Dyer, Joseph Aloysius	East Providence
Earle, Marsden Perry	Cranston
Earnshaw, Eldred King	Mystic, Conn.
Ellis, Lester Joseph	Brockton, Mass.
Fahey, Leo J.	Central Falls
Famiglietti, Albert Mitchell	Providence
Farnham, Paul Sawyer	Providence
Farnham, Raymond Ellsworth	Providence
Fenwick, Harold Matthew	North Easton, Mass.
Fetting, Edward Emil	Providence
Fletcher, Leslie Seekell	Providence
Flynn, Frederick John	Woonsocket
Fort, William Sutherland	Woonsocket
Foster, Benjamin Norton	Auburn
Frohock, Warren Theodore	Auburn
Galligan, Walter F.	Providence
Gamble, Edward Henry	Pawtuxet
Gardiner, Jeremiah	Riverside
Gardner, Charles Sydney	Brockton, Mass.
Gardner, Kenneth Raymond	Seekonk, Mass.
Gencarello, Angelo Mario	Westerly
Gillis, Watson Clarence	Providence
Godfrey, Edward Louis	Providence
Goff, Walter Wheeler	Providence
Goldstein, Sigmund	Providence
Grant, Herbert Edward	Barrington
Gray, Howard Brownell	Bristol
Greene, James Francis	Woonsocket
Greene, Whitney Eastman	Kingston

Hackett, Everett Proctor	Providence
Haines, John Lloyd	Bristol
Harrington, Gordon Leslie	Woodville
Haslam, Arthur Edmond	Providence
Hastings, Vinal Norberg	Boston
Hay, William Carney	Providence
Helliwell, Richard A.	Peace Dale
Henley, Gordon Chandler	Providence
Higgins, Harold Vernon	Providence
Hildreth, Charles Tew	Newport
Hillard, Paul Noyes	Westerly
Hinchey, John Nicholas	Providence
Hirst, Charles	Fall River, Mass.
Hobbs, Howard Alfred	East Providence
Hoffman, Milton	Providence
Holden, John Hamer	Hartford, Conn.
Holland, Francis Aloysius	Providence
Holley, Albert Henry	Providence
Holley, Arthur Tucker	Wakefield
Holley, Charles Potter	Kingston
Holyoke, Kenneth Leslie	Providence
Horenstein, Charles Samuel	Providence
Horsefield, Raymond Ernest	Belleville, N. J.
Howe, John Edward	Woonsocket
Jack, David Waterhouse	Pawtucket
Jacobs, Benjamin Dewey	Providence
Johnson, Ernest Alfred	Providence
Johnson, Oscar Sigfried	Providence
Jordan, James Chester	Arlington
Jordan, Theodore Foster	New London, Conn.
Kelley, Francis Edward	Providence
Kelly, Kieran Francis	Woonsocket
Kenyon, Howard Vernon	Lafayette
Kern, Harold Ferdinand	Providence
Kerigan, Joseph Matthew	Providence
King, William	East Providence
Kissouth, Archie Alexander	Narragansett Pier
Kwasha, Leonard James	Providence
Lafleur, Leo Henry	Warren
Landy, Frank	Ashton
Lee, Francis P.	Pawtucket
Lennon, Francis Joseph	Providence
Levine, Sidney Joseph	Providence
Levy, Samuel Joseph	Providence
Lewis, Harold E.	Wickford
Lewis, John Owen	Providence
Long, Raymond Cullen	Woonsocket
Lyon, Hyman Max	Providence

Lyons, Jeremiah Patrick	New London, Conn.
McCaughey, Everett Vincent	Lonsdale
McCormick, Lloyd Hamilton	Pontiac
McDonald, John James	East Providence
McKee, Samuel Allen	Woonsocket
Mahon, Vincent Joseph	Woonsocket
Malenfant, John Roy	Providence
Manning, Atwell Mowry	Riverside
Marshall, Clarence Fuller, Jr.	Providence
Marshall, Samuel S., Jr.	Providence
Martelli, Pasqualino	Essex, Conn.
Marx, Howard Earle	Providence
Maynard, George Joseph	Providence
Meunier, Roland Ernest	Arctic
Miller, Wallace Jeffrey	Central Falls
Mitchell, Anthony Nicholas	Newport
Mitchell, James Albert	Oakland
Moore, Edward Joseph	Pawtucket
Moore, Walter Webster	Providence
Moorhouse, George Sidney Redvers	Westerly
Morehouse, Wade Allen	Providence
Mosher, Clifford Hollis	Auburn
Mott, Karl Ernest	Providence
Mowry, Sigsbee Dewey	Providence
Newman, George William	Providence
Niven, John Chester, Jr.	Providence
Nordquist, Carl Arthur	Providence
Nye, John Fremont	Westerly
Oberg, Nils Albin	Natick
O'Brien, Lewis Henry, Jr.	Cranston
Ogden, Harold H.	Providence
O'Neil, Joseph Edward	Brockton, Mass.
Palmer, Earl Geer	Hope Valley
Papalia, Philip Dewey	Westerly
Peckham, Charles Daniel	Bradford
Petit, Leon Thomas	Providence
Pezzullo, Rocco	Providence
Pihl, Roland Taylor	Pawtucket
Poliquin, Leo Odilon	Pawtucket
Peterson, Thurston Waldemar	Pawtucket
Pope, Wallace Irving	Providence
Potter, Grant Hamblett	Providence
Potter, Harold Albert	East Providence
Pratt, Lawrence Newton	Providence
Prout, Earle Frederick	Providence
Quigley, Daniel Mark	Peace Dale
Rattenni, Arthur	Providence
Reed, Donald Stevenson	Providence

Reed, John Hamilton	Providence
Regan, Thomas Patrick	Providence
Reid, David, Jr.	Peace Dale
Remington, Railford White	Fiskeville
Rhodes, Frederick Miller, Jr.	Providence
Rhodes, Lyndon Russell	Edgewood
Rider, Adin Cook	Providence
Riley, Francis Anthony	Riverpoint
Roberts, George Henry, Jr.	Woonsocket
Robitaille, Eugene Francis	Providence
Roegner, George Elmer	Providence
Rondo, Anthony	Providence
Rossi, Albert Michael	Providence
Sakrison, Gustaf Edward	Providence
Sekowski, John Joseph	North Attleboro, Mass.
Selonek, Lester Myron	Providence
Senerchia, Chelsie James	Arctic
Serbst, Henry Francis, Jr.	Bristol
Shaw, Benjamin Allen	Wakefield
Shaw, James Gammon	East Providence
Sherman, Isaac Thornton	Newport
Shulver, William, Jr.	Pawtucket
Simas, William Harvey	East Providence
Sklut, Israel	Elmwood
Smith, Edward Michael	Providence
Smith, Harold Morey	Woonsocket
Smith, Isaac Willard	West Barrington
Smith, Raymond Ross	Providence
Spink, Herbert Elmer	Davisville
Stark, William Henry	Providence
Stickley, Charles J.	Wakefield
Stillman Louis	Providence
Sullivan, Edward Joseph	Providence
Sullivan, John J.	Wickford
Sullivan, Maurice Joseph	New London, Conn.
Sullivan, Thomas Bernard	Providence
Swan, Herbert L., Jr.	Providence
Taft, Richard Christie	Brockton, Mass.
Thornton, Albert Angell	Johnston
Titchener, Frederick Herman	Providence
Torgan, Nathan, Jr.	Providence
Totman, Frank Howard	Providence
Troupansky, Charles Leo	Providence
Trudell, Edward Paul	Bristol
Turner, Everett Edgar	Brockton, Mass.
Turner, Frederick Allen, Jr.	Riverside
Tuzio, Arthur John	Providence
Tweedell, James C.	Edgewood

Viall, Lawrence Arundel	Providence
Vreeland, Milton Leslie	Providence
Wagner, Joseph Frederick	Providence
Wales, Charles Howard	Haverhill, Mass.
Walmsley, Clarence Bradley	Tiverton
Walsh, Philip Leo	Fall River, Mass.
Webster, Andrew Nelson	Wethersfield, Conn.
Westfield, Howard Wentworth	Riverside
Whaley, Andrew Thomas	Peace Dale
Whitcomb, Henry Alexander	New London, Conn.
Wiley, Maurice Waterman	Wellfleet, Mass.
Williamson, William Joseph	Pawtucket
Wilmot, William Earl	Wickford
Wilson, Harold Joseph	Providence
Winsor, Leonard Alfred	Providence
Wood, George William	Providence
Worcester, Carlton Everett	Pawtucket
Worrall, Alfred Stephen	Providence
Wright, Edward Davis	Narragansett Pier
Wronwick, Charles Anthony	Brooklyn, N. Y.
Yarvots, Evert	New London, Conn.
York, Herbert	Bloomfield, Conn.
Zerbarini, Angelo Joseph	Westerly

Summary

Graduates	2
Seniors	32
Juniors	43
Sophomores	48
Freshmen	125
Irregulars	5
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Total College	255
Students' Army Training Corps	268
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Total	523
Names repeated	121
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Total attendance for college	402

Graduates

1894

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD.....	Agr.	Professor of Agronomy, R. I. S. C.
M. Agr. R. I. State College, 1916. Kingston.		
AMMONDS, GEORGE CLARENCE.....	Mech.	Railroad Postal Clerk, on N. Y., 54 Eliot St., Boston, Mass. N. H. & H. R. R.
ARNOLD, CHAPIN TRAFFORD.....	Agr.	Electrical Contractor, Office 26 Box 57, Providence. Custom House St., Providence.
BURLINGAME, GEO. WASHINGTON....	Agr.	Farmer and Teacher. R. F. D. No. 2, Box 56, North Scituate.
CLARK, HELEN MAY (Mrs. Wm. F. B. LEAVITT), B. L., Smith Col- lege, 1899. Essex Fells, New Jersey.		At home.
KNOWLES, JOHN FRANKLIN.....	Mech.	With The Bristow Bros. & Knowles Narragansett Pier. Corporation.
*MADISON, WARREN BROWN.....	Agr.	
MATHEWSON, ERNEST HOXSIE.....	Mech.	Crop Technologist in Tobacco, Ph. B., Brown University, 1896. U. S. Department of Agricul- Reidsville, North Carolina. ture.
PECKHAM, REUBEN WALLACE.....	Agr.	Y. M. C. A. Secretary, 41 Rue de Provence, Paris, France.
RATHBUN, WILLIAM SHERMAN.....	Agr.	Proof-Reader, Eureka Blank Book 38 Forest St., Willimansett, Mass. Co., Holyoke, Mass.
RODMAN, GEORGE ALBERT.....	Mech.	General Supervisor, Bridges and New Haven, Conn. Buildings, Union Station, N. Y., N. H. & H. R. R. Co.
SARGENT, CHARLES LAWRENCE.....	Agr.	Superintendent, Color Department, Ph. D., University of Murphy Varnish Co. Pennsylvania, 1900. 54 Shepard Ave., Newark, N. J.
SLOCUM, SAMUEL WATSON.....	Agr.	Instructor of Woodwork, West- 60 Summer St., Westerly. erty Schools.
SPEARS, JOHN BARDEN.....	Agr.	Rural Letter Carrier. Foster Centre.

It is earnestly desired that graduates inform the college office of any permanent change of address

* Deceased.

NAME AND ADDRESS.

COURSE.

OCCUPATION.

SWEET, STEPHEN ADELBERT.	Agr.	Farmer.
Slocum.		
TUCKER, GEORGE MASON.	Agr.	Farmer.
Ph. D. Göttingen, 1899.		
Wendel, Pa.		
WILBER, ROBERT ARTHUR.	Mech.	Carriage-maker and blacksmith.
East Greenwich.		

1895

*ALBRO LESTER FRANKLIN.	Agr.	
BURDICK, HOWLAND.	Agr.	Assistant Professor of Dairying, R. I. S. C.
Kingston.		
CLARKE, CHARLES SHERMAN.	Mech.	Marine Engineer.
22 Wood St., Bristol.		
ELDRED, MABEL DEWITT.		Instructor in Drawing, R. I. S. C.
Kingston.		
HAMMOND, JOHN EDWARD.	Agr.	Farmer.
Jamestown.		
OATLEY, LINCOLN NATHAN.	Mech.	Contractor and builder ; Coal Dealer.
Wakefield.		
SCOTT, ARTHUR CURTIS.	Mech.	Consulting Engineer.
Ph. D., Univ. of Wisconsin, 1902.		
4114 Cedar Springs Ave., Dallas, Texas.		
TEFFT, JESSE COTTRELL.	Mech.	Boatswain, U. S. Naval Reserve, Mine Sweeper Pokomocke No. 265.
Jamestown.		
WINSOR, BYRON EDGAR.	Mech.	Poultryman.
Coventry.		

1896

BROWN, MAY (MRS. CHARLES A. WHITE).		At home.
Narragansett Pier.		
GREENMAN, ADELAIDE MARIA (MRS. R. WALLACE PECKHAM).		At home.
Graduate, School of Expression, 1901.		
Wakefield.		
KENYON, ALBERT LEWIS.	Mech.	With U. S. Finishing Co.
240 Camp St., Providence.		
MOORE, NATHAN LEWIS CASS.	Agr.	Fruit-grower.
Harrington Park, New Jersey.		
TABOR, EDGAR FRANCIS.	Mech.	Foreman Printer, The Southbridge Printing Co.
39 Everett St., Southbridge, Mass.		
*WILLIAMS, JAMES EMERSON.	Agr.	

1897

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS.....Sci. Shannock.		With Underwood Typewriter Co., 74 Franklin St., Boston, Mass.
CASE, HERBERT EDWARDS BROWN..Mech. Ph. B., Brown University, 1900. Graduate, Hartford Theological Seminary, 1904. 14 Beacon St., Boston, Mass.		Secretary, Amer. Board of Com- missioners for Foreign Missions.
GRINNELL, ARCHIE FRANKLIN.....Mech. 114 Asylum St., Norwich, Conn.		Assistant to Chief Engineer, Marlin-Rockwell Corp.
HANSON, GERTRUDE MAIE.....Sci. Westerly.		At home.
HOXSIE, BESSIE BAILEY (MRS. E. F. RUECKERT).....Sci. 98 Melrose St., Providence.		At home.
KENYON, ALBERT PRENTICE.....Mech. 23 Courtland St., Westerly.		Bookkeeper, Maxson & Co., West- erly.
KENYON, CHARLES FRANKLIN.....Mech. Shannock.		Engineer.
LARKIN, JESSIE LOUISE.....Sci. 98 Beach St., Westerly.		Genealogist.
*MARSLAND, LOUIS HERBERT.....Mech.		
TEFFT, ELIZA ALICE.....Sci. East Greenwich.		Teacher.
THOMAS, IRVING.....Mech. Lafayette.		Farmer and Mill Operative.

1898

ARNOLD, SARAH ESTELLE (MRS. R. O. BROOKS).....Sci. 975 East 18th St., Brooklyn, N. Y.		At home.
BARBER, GEORGE WASHINGTON.....Agr. Glendora, Cal.		Rancher.
CARGILL, EDNA MARIA (MRS. LESTER H. BROWN).....Sci. R. F. D. No. 2, Box 96, Valley Falls.		At home.
CASE, JOHN PETER.....Agr. 251 Monadnock Bldg., San Francisco, Cal.		Manager Western Office, Brown Hoisting Machinery Company.
CLARKE, WILLIAM CASE.....Sci. 114 Lorimer Ave., Providence.		General Manager, Narragansett Pier Elec. Light and Power Co.
CONGDON, HENRY AUGUSTUS.....Mech. Kingston.		Farmer.
FLAGG, MARTHA REBECCA.....Sci. Abbott Run.		At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HARLEY, WILLIAM FERGUSON.....	Agr.	Buyer, with Callender, McAuslan & Troup, Co., Providence.
23 Summit Ave., Providence.		
TURNER, HARRIETTE FLORENCE		
(MRS. GEO. M. TUCKER).....	Sci.	At home.
Graduate, Drexel Institute, 1900.		
Wendel, Pa.		
WILSON, GRACE ELLEN		
(MRS. W. F. HARLEY).....	Sci.	At home.
23 Summit Ave., Providence.		

1899

BOSWORTH, ALFRED WILLSON.....	Sci.	Biological Chemist, Boston Floating Hospital; Research Fellow, Harvard Medical School.
A. M., Harvard University, 1913.		
418 Brook Road, Milton, Mass.		
BROOKS, RALPH ORDWAY.....	Sci.	Consulting Chemist, Bacteriologist, Microscopist, Food-Inspection Expert, 191 Franklin St., New York City.
975 East 18th St., Brooklyn, N. Y.		
GEORGE, LILLIAN MABELLE.....	Sci.	Cataloger, Oregon Agricultural College Library.
A. B., Univ. Illinois, 1904. Graduate,		
N. Y. State Library School, 1910.		
135 N. 26th St., Corvallis, Ore.		
HARVEY, MILDRED WAYNE		
(MRS. WM. H. BLISS).....	Sci.	At home.
390 Wadsworth Ave., New York City.		
KENYON, BLYDON ELLERY.....	Agr.	Asst. Supt. of Construction, Stone & Webster Eng. Corporation.
Dover, New Jersey.		
KNOWLES, CARROLL.....	Mech.	Chief Tool Designer, Brown & Sharpe Mfg. Co.
77 Chiswick Road, Edgewood.		
KNOWLES, HARRY.....	Sci.	Advertising, Atlas Portland Cement Co.
Ph. B., Brown University, 1906.		
113 Ft. Greene Place, Brooklyn, N. Y.		
LADD, MERRILL AUGUSTUS.....	Mech.	Secretary and Treasurer, Florida Electric Supply Co.
Jacksonville, Fla.		
MORRISON, CLIFFORD BREWSTER.....	Sci.	Assistant Chemist, Conn. State Experiment Station.
New Haven, Conn.		
OWEN, WILLIAM FRAZIER.....	Mech.	Engineering Department, General Electric Co.
Schenectady, N. Y.		
PAYNE, EBENEZER.....	Sci.	Orange Grower.
M. D., Univ. Michigan, 1904.		
Glendora, Cal.		
PHILLIPS, WALLER CLARKE.....	Mech.	Instructor in English, Brown University.
Ph. B., Brown University, 1902.		
A. M., Brown University, 1903.		
Providence.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
REYNOLDS, ROBERT SPINK. Room 314, Gen. Office Bldg., New Haven, Conn.	Mech.	Assistant Engineer, Bridge Dept., N. Y., N. H. & H. R. R. Co.
RICE, MINNIE ELIZABETH (MRS. ROBERT J. SHERMAN) Exeter Hill.	Sci.	At home.
SHERMAN, ABBIE GERTRUDE (MRS. BENJAMIN BARTON) 56 Pavilion Ave., Providence.	Sci.	At home.
*SHERMAN, GEORGE ALBERT.	Mech.	
THOMPSON, SALLY RODMAN (MRS. LEWIS BALCH, JR.) Wakefield.	Sci.	At home.

1900

BRIGHTMAN, HENRY MAXSON. 32 Mountain Ave., Edgewater, N. J.	Mech.	Drying Expert, with B. F. Sturtevant Co., Room 1706, 52 Vanderbilt Ave., New York City.
CROSS, CHARLES CLARK. 316 Schantz Ave., Troy, Ohio.	Mech.	Vice-President and General Manager, Troy Mfg. Co., Troy, Ohio.
ELDRED, JOHN RALEIGH. Kingston.	Mech.	Instructor in Mechanical Engineering, R. I. S. C.
FISON, GERTRUDE SARAH (MRS. JOHN W. ROOT) 139 Fresh Pond Parkway, Cambridge, Mass.	Sci.	At home.
FRY, JOHN JOSEPH. Greenwich, Conn.	Sci.	Supervising Principal Byram School and Hamilton Ave. School.
GODDARD, EDITH (MRS. LAWRENCE B. REED) 20 North St., Plymouth, Mass.	Sci.	At home.
KENYON, AMOS LANGWORTHY. Wood River Junction.	Agr.	Dairyman.
MUNRO, ARTHUR EARLE. Ph. B., Brown University, 1902. 41 George St., Providence.	Sci.	Attorney-at-law, 49 Westminster St.
SOULE, RALPH NELSON. Racine, Wisconsin.	Sci.	Mgr., Gen. Service Dept., Mitchell Motor Co., 842 Main St., Racine.
STEERE, ANTHONY ENOCH. Room 54, Triangle Bldg., Rochester, N. Y.	Mech.	Resident Civil Engineer, New York State Canals.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
STILLMAN, LENORA ESTELLE	Sci.	Teacher.
1046 Greene Ave., Brooklyn, N. Y.		
TUCKER, BERTHA DOUGLASS.	Sci.	Teacher of Dressmaking, Boston
109 Queensbury St., Boston, Mass.		Trade School.
WHEELER, CHARLES NOYES.	Sci.	Clerk, Wm. H. Haskell Manufac-
21 Cedar St., Pawtucket.		turing Co.
WILSON, JOSEPH ROBERT.	Mech.	Surveyor.
184 Grace St., Auburn.		

1901

BRAYTON, CHARLES ANDREW.	Agr.	Farmer.
Hope, R. F. D.		
BRIGGS, NELLIE ALBERTINE.	Sci.	Stenographer, R. I. Hospital Trust
Providence.		Co.
BURGESS, CHARLES STUART.	Mech.	Draughtsman, Brown & Sharpe
264 Sayles St., Providence.		Mfg. Co.
CLARNER, LOUIS GEORGE KARL, JR.	Sci.	Insurance Engineer, N. E. Bureau
19 Pearl St., Concord, N. H.		of Underwriters.
DAWLEY, EDNA ETHEL		
(MRS. GEORGE W. WHITFORD).	Sci.	At home.
West Kingston, R. F. D., Box 80.		
DENICO, ARTHUR ALBERTUS.	Sci.	Traffic Engineer, with American
Ph. B., Brown University, 1904.		Telephone and Telegraph Co.
195 Broadway, New York City.		
*JAMES, RUTH HORTENSE		
(MRS. HERBERT E. ROUSE).	Sci.	
SHERMAN, ANNA BROWN		
(MRS. JOSEPH R. WILSON).	Sci.	At home.
184 Grace St., Auburn.		
SHERMAN, ELIZABETH AGNES.	Sci.	Secretary to Research Chemist,
424 Mass. Ave., Boston, Mass.		Arthur D. Little, Inc., Boston.
SMITH, HOWARD DEXTER.	Sci.	Instructor in Chemistry, Lowell
A. M., Brown University, 1904.		Textile School.
Ph. D., Tufts College, 1906.		
669 Westford St., Lowell, Mass.		
STEERE, ROWENA HOXIE.	Sci.	Stenographer.
102 Sassafras St., Providence.		
*WILBY, JOHN.	Sci.	

1902

CLARKE, LATHAM.	Chem.	Director, Instituto de Quimica
A. M., Brown University, 1903.		Industrial.
Ph. D., Harvard University, 1905.		
Montevideo, Uruguay.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FERRY, OLIVER NEEDHAM..... 111 Coniston Ave., Waterbury, Conn.	Mech.	Superintendent, Waterbury Tool Co.
MAXSON, RALPH NELSON..... Ph. D., Yale University, 1905. 366 Transylvania Park, Lexington, Ky.	Chem.	Professor Inorganic Chemistry, State University.
PITKIN, ROBERT WILLIAM..... Rockville, Conn., R. F. D. No. 1.	Mech.	Farmer.

1903

BARBER, KATE GRACE (MRS. A. L. WINTON)..... Ph. D., Yale University, 1906. Wilton, Conn.	Gen. Sci.	At home.
CONANT, WALTER AIKEN..... Temple, N. H.	Agr.	Dairying, The Conant and Clem- ent Farms, Hillsboro County.
GODDARD, WARREN, JR..... Graduate, New Church Theological School, 1907. 229 S. Walnut St., Urbana, Ohio.	Mech.	Instructor in Physics, Chemistry and Theology, Urbana Univ. Schools.
KEEFER, EDITH CECILIA..... 26 West 55th St., New York City.	Biol.	Teacher of Mathematics, Miss- Spence's School.
KENT, RAYMOND WARREN..... A. M., Harvard University. 1237 Ridge Road, Canton, Ohio.	Chem.	Chemist, The Knight Tire & Rub- ber Co.
TEFFT, ERNEST ALLEN..... 85 Larch St., Providence.	Elec. Eng.	Electrical Contractor, 87 West- minster St.

1904

BALLOU, WILLARD ALGER..... B. S., Columbia University, 1913. M. A., Columbia University, 1915. 335 Lafayette Ave., Brooklyn, N. Y.	Biol.	Instructor in Mathematics, Pratt Institute.
QUINN, MARY LOUISE..... 285 Locust St., Fall River, Mass.	Biol.	Teacher of Science, Technical High School.
RODMAN, WALTER SHELDON.... M. S., R. I. S. C., 1907. M. S., Mass. Inst. Tech., 1909. Box 222, University, Va.	Elec. Eng.	Professor of Electrical Engineer- ing, University of Virginia.

1905

CHAMPLIN, SARAH ELIZABETH (MRS. HAROLD L. FRIEND).... 306 Smith St., Edgewood.	Gen. Sci.	At home.
DOW, VICTOR WELLS..... 14 Sewall Woods Road, Melrose, Mass.	High. Eng.	New England Manager, Amer. Bronze Corporation.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GILMAN, JEAN Hampton, Va.	High. Eng.	Assistant to Director of Trade School, Hampton Institute.
HARRALL, NELLIE ARMSTRONG (MRS. B. H. ARNOLD) Graduate, Sargent School of Physical Education, 1909. East Greenwich.	Gen. Sci.	At home.

1906

ARNOLD, BENJAMIN HOWARD East Greenwich.	Elec. Eng.	Captain, U. S. Engineers.
*BERRY, WALLACE NOYES	Elec. Eng.	
ELKINS, MARION GRAHAM Ph. D., Yale University, 1912. 10 Moody St., Amesbury, Mass.	Gen. Sci.	Dean of Botany, Oxford College.
HARDING, LEE LAPLACE New Britain, Conn.	High. Eng.	Coördinating Engineer, Tractor Dept., New Britain Machine Co.
KEYES, FREDERICK GEORGE Sc. M., Brown University, 1907. Ph. D., Brown University, 1909. 60 Fenway, Boston, Mass.	Chem.	American Expeditionary Force. Major, Chemical Warfare Ser- vice.
NICHOLS, HOWARD MARTIN 14 Clifford St., Readville, Mass.	Elec. Eng.	Engineer, B. F. Sturtevant Co.
SISSON, CORA EDNA (MRS. BENJAMIN D. BUSH) M. S., Brown University, 1910. Lakewood, N. J.	Gen. Sci.	At home.
WILKINSON, ALBERT EDMUND M. Agr., R. I. State College, 1916. May's Landing, N. J.	Agr.	County Agricultural Agent.

1907

BARBER, ARTHUR HOUGHTON East Greenwich.	Mech. Eng.	Inspector for Associated Factory Mutual Fire Insurance Cos., Boston, Mass.
COGGINS, CALVIN LESTER Kingston.	Elec. Eng.	Assistant Professor of Physics and Elec. Eng., R. I. S. C.
FERRY, JAY RUSSELL Warren.	High. Eng.	Captain, 105th Aero Squadron, Signal Corps, American Expedi- tionary Force.
KELLOGG, DAVID RAYMOND Ph. D., Ohio State University, 1912. Albemarle Bldg., 24th and Broad- way, New York.	Chem.	Captain, Ordnance R. C., Inspec- tion Division.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
KENDRICK, WINFIELD SMITH.	Elec. Eng.	In charge Sales Lab. Products, General Electric Co.
115 Waverly Place, Schenectady, N. Y.		
LAMOND, JOHN KENYON.	Elec. Eng.	Assoc. Director, Dept. Military Relief, Penn.-Del. Div., American Red Cross.
M. A., Yale University, 1908. Ph. D., Yale University, 1910. 320 S. 11th St., Philadelphia, Pa.		
LEWIS, HARRY REYNOLDS.	Agr.	Professor, Dairying and Poultry Husbandry, Univ. of New Jersey.
M. Agr. R. I. S. C., 1916. 1 Clifton Ave., New Brunswick, N. J.		
*MACOMBER, MINER SANFORD.	Chem.	
TUCKER, ETHEL ALDRICH (MRS. LITTLETON C. HAYDEN)	Gen. Sci.	At home.
28 Sadler Ave., Pittsfield, Mass.		

1908

DREW, JOSEPH DRAKE.	Chem.	Chemist, Tenn. Coal, Iron & R. R. Co.
Fairfield, Alabama.		
FIELD, CLESSON HERBERT.	Civ. Eng.	Contracting Engineer, Ferguson Steel & Iron Co., Buffalo, N. Y.
C. E., Lehigh University, 1909. 272 Washington Highway, Snyder, N. Y.		
FISKE, HERBERT ANDREW.	Elec. Eng.	Proprietor, H. A. Fiske Garage.
1800 Acushnet Ave., New Bedford, Mass.		
GARDINER, ROBERT FRANKLIN.	Chem.	Research Chemist, Bureau of Sales, U. S. Dept. of Agriculture.
M. S., George Washington University, 1914. Box 344, Clarendon, Va.		
GORY, EDWARD ALLEN.	Elec. Eng.	Electric Engineer, General Electric Co., Lynn, Mass.
5 City Hall Square, Lynn, Mass.		
KENYON, SUSAN ELNORA (MRS. FRED K. CRANDALL).	Biol.	At home.
Kingston.		
MITCHELL, CLOVIS WILLIAM.	Civ. Eng.	Superintendent of Schools.
Greenville.		
ROSE, ORPHA LILLIE (MRS. HENRY A. CONGDON).	Gen. Sci.	Teacher.
Kingston.		
SHELDON, GEORGE WARE.	Elec. Eng.	With Westinghouse Electric Co.
Wakefield.		
SHERMAN, MARY ALBRO (MRS. FRED M. MANLY).	Agr.	At home.
West Fairlee, Vt.		

NAME AND ADDRESS.

COURSE.

OCCUPATION.

SMITH, JOHN LEBROC	Elec. Eng.	Teacher of Mathematics, Crosby High School.
A. M., Brown University, 1915.		
41 Holmes Ave., Waterbury, Conn.		
WHIPPLE, LUCIUS ALBERT	Civ. Eng.	Superintendent, State Home and School.
1142 Smith St., Providence.		

1909

CARGILL, RHOBIE LUCELIA	Appl. Sci.	Teacher of Mathematics, Technical High School.
Valley Falls.		
CRAIG, JAMES MCINTYRE	Agr.	Gardener and Merchant.
Casilla Correo 23, Rosario de Sta. Fe,		
Argentine.		
CRANDALL, FRED KENYON	Agr.	Assistant, Agronomy Dept., Experiment Station, R. I. S. C.
Kingston.		
FRENCH, HENRY FRANK	Elec. Eng.	Turbo-Generator Engineer, General Electric Co.
57 Mall St., West Lynn, Mass.		
HOWE, ALBERT MENDEL	Elec. Eng.	Inspector, Bay State St. Ry. Co.
20 Follen St., Boston, Mass.		
KNOWLES, WALTER	Civ. Eng.	Seaman, U. S. Navy.
Kingston.		
LEE, ALFRED ROGERS	Agr.	Animal Husbandman, in Poultry Investigation, Bureau of Animal Industry, U. S. Dept. of Agriculture.
Decatur Heights,		
Bladensburg, Md.		
MORAN, WALTER JOHN	Civ. Eng.	With Groton Iron Works, Groton, Conn.
R. F. D., Uncasville, Conn. -		
MOYER, LOUIS EARL	Civ. Eng.	Civil Engineer, State of New York, Commission of Highways.
Seneca Falls, N. Y.		
ROCKWELL, RUBY BELL		
(Mrs. JOHN O'LOUGHLIN)	Chem.	At home.
10 Milford St., Binghamton, N. Y.		
SMITH, ELMER FRANCIS	Elec. Eng.	Principal Roselle Park High School.
331 Walnut St., Roselle Park, N. J.		
TISDALE, HARRY ROBERT	Chem.	Supt., Dye House, Brainerd & Armstrong, Silk M'f'rs.
Mass. Inst. Technology, 1911.		
58 Georgiana St., New London, Conn.		
TUCKER, ELLEN CAPRON	Gen. Sci.	At home.
Kingston.		

1910

BURGESS, PAUL STEERE	Chem. Eng.	Chief Chemist and Bacteriologist, with Hawaiian Sugar Planters' Association, Experiment Station.
M. S., University of Illinois, 1911.		
Honolulu, Hawaii.		
CARPENTER, RANDOLPH HAYWOOD, El. Eng.		Sales Engineer, Westinghouse Electric & Mfg. Co., 165 Broadway.
632 East 26th St., Brooklyn, N. Y.		
CUMMINGS, ROBT. WINTHROP, Mech. Eng.		Tool Supervisor, Hammer Drill Dept., Ingersoll-Rand Co.
56 Fillmore St., Phillipsburg, N. J.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GOODALE, RALPH WALDO	Civ. Eng.	Draftsman, Real Estate Dept., N.Y., N. H. & H. R.R. Co.
921 Howard Ave., New Haven, Conn.		
HARDY, JOHN IRA	Gen. Sci.	Wool Specialist, Univ. of Wyoming Experiment Station.
Ph. D., Univ. of Missouri, 1917. 817 Grand Ave., Laramie, Wyoming.		
HEATH, BERTHA MAY	Agr.	
KENYON, AMOS HARRIS	Elec. Eng.	Traffic Chief, American Tel. & Tel. Co.
131 Abbott St., Providence.		
LAMOND, HELEN SCOTT (Mrs. R. H. CARPENTER)	Gen. Sci.	At home.
632 East 26th St., Brooklyn, N. Y.		
MOUNCE, LEROY LEIDMAN	Agr.	Manager, Upwey Farms.
South Woodstock, Vt.		
PEABODY, GEORGE ABBOTT	Elec. Eng.	Erecting Engineer, Construction Dept., General Electric Co.
Schenectady, N. Y.		
SHERMAN, JOHN LELAND	Agr.	Farmer.
R. F. D. 147, Mansfield, Mass.		
SMITH, HIRAM JAMESON	Civ. Eng.	First Lieutenant Engineers, 503rd Service Regt., Co. C., Amer. Exp. Force.
Woonsocket.		
WAGNER, ALBERT FREDERIC	Elec. Eng.	Asst. Professor of Physics, U. S. Naval Academy.
M. S., Purdue Univ., 1913. Annapolis, Md.		
WHEELER, RICHARD HOWES	Elec. Eng.	Engineer.
Virginia St., Charlestown, West Va.		
WORRALL, DAVID ELBRIDGE	Chem.	Instructor in Chemistry, Harvard University.
M. A., Harvard Univ., 1911. Cambridge, Mass.		

1911

ANDREWS, CARMEN NICHOLS	Appl. Sci.	Teacher, A. P. Hoyt School, East Slocums.
ANGILLY, CHARLES ENOCH, JR.	Civ. Eng.	City Dept. of Public Service.
5428½ So. Figueroz St., Los Angeles, Cal.		
EASTERBROOKS, HAROLD ARNOLD	Biol.	Student, Tufts Medical School, Boston.
280 Benefit St., Providence.		
EASTERBROOKS, LOUIS CHURCH	Agr.	In business.
280 Benefit St., Providence.		
GILCHRIST, CLYDE RONALD	Elec. Eng.	Commercial Engineer, Supply Dept., Westinghouse Electric and Manufacturing Co.
618 Centre St, Wilkinsburg, Pa.		
HARRIS BURTON KENNETH	Chem. Eng.	Lime Manufacturer.
R. F. D., Saylesville.		
HEALY, PATRICK JOSEPH	Agr.	Gardener, care Ralph Armstrong.
400 Madison Ave., New York.		

NAME AND ADDRESS.

COURSE.

OCCUPATION.

KENT, ROBERT WILLARD.....	Mech. Eng.	Construction Engineering with 1298 Commonwealth Ave., Boston, Mass.
MINOR, ARTHUR JACOB.....	Civ. Eng.	Captain, 21st Engineers, Amer. C. E., R. I. S. C., 1915. Expeditionary Force. New York City.
NEAL, WILLIAM THOMAS.....	Agr.	Proprietor of Tripp Floral Co. Walton, N. Y.
ROBINSON, BENJ. ROWLAND...	Mech. Eng.	Chief Draftsman, Sanford-Riley 32 Clark St., Worcester, Mass. Stoker Co.
RUPRECHT, RUDOLF WILLIAM...	Appl. Sci.	Chief Chemist and Superintendent M. S., Mass. Agr. College, 1914. of Fertilizer Factory, F. W. Jun- Ph. D., Mass. Agr. College, 1916. nell & Co. Delmar-Morris Apartments, Germantown, Pa.
SAFFORD, HOWARD ALBERT.....	Agr.	Chief Gardener. National Soldiers' Home, Maine.
TUCKER, HARRIET TABER (MRS. DAVID E. WORRALL)....	Gen. Sci.	At home. Cambridge, Mass.
*WADE, CEYLON RAYMOND.....	Civ. Eng.	

1912

BARLOW, HENRY NEWELL.....	Elec. Eng.	Dairy Farmer. Sharon, Conn.
BIGELOW, CARLE MUZZY.....	Appl. Sci.	Chief Engineer, and Member of 16 Chestnut Terrace, Firm, Cooley & Marvin Co. Newton Centre, Mass.
CALDWELL, DOROTHY WALCOTT...	Civ. Eng.	Assistant in Bacteriology, Experi- M. S., R. I. S. C., 1914. ment Station, R. I. S. C. Kingston.
CLARKE, PHILIP HARRISON....	Elec. Eng.	Industrial Control Engineer, General 714 Chrysler Ave. Electric Co. Schenectady, N. Y.
COBB, ELECTRA HENRIETTA (MRS. JOHN L. SHERMAN)...	Home Econ.	At home. R. F. D. 147, Mansfield, Mass.
DOLL, WALTER.....	Mech. Eng.	Mechanical Engineer with Beaman 19 Stanwood St., Providence. & Smith Co.
HENDERSON, ETHEL PIERCE (MRS. E. K. WILCOX).....	Appl. Sci.	At home. 72 Elm St., Stonington, Conn.
KENYON, ANNIE ELIZA (MRS. S. C. WEBSTER, JR.)...	Appl. Sci.	At home. R. F. D., West Kingston.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LARKIN, CHARLES HERBERT.	Civ. Eng.	Civil Engineer, with Boston & Maine Railroad.
56 Bower St., West Medford, Mass.		
NUTTING, BERTHA MAY		
(MRS. LEVERICH G. LENHAM) Home Econ.	At home.	
Lackawanna, N. Y.		
PATTERSON, ARTHUR JOHN.	Elec. Eng.	Captain, 29th Engineers, R. C.
758 Quebec Place, N. W.,		
Washington, D. C.		
RICHMOND, FRED ALLEN.	Elec. Eng.	Mech. Valuation Pilot, N. Y. Central Railroad Co.
17 Stanley Place, Yonkers N. Y.		
SHERMAN, GEORGE WM. JR.	Elec. Eng.	Assistant Professor of Physics, Purdue University.
M. S. Purdue Univ., 1914.		
4 Murdock Flats,		
West Lafayette, Ind.		
*SLATER ALLAE CORDELIA		
(MRS. ARTHUR J. MINOR)	Home Econ.	
WARNER, DAVID EDMOND, JR.	Agr.	Instructor in Poultry Husbandry.
Storrs, Conn.		
WEBSTER, SAMUEL C., JR.	Agr.	Farmer.
R. F. D., West Kingston.		
WHELAN, WILLIAM JOSEPH.	Appl. Sci.	Supt. of Buildings, R. I. S. C.
Kingston.		

1913

ALEXANDER, RALPH IRWIN.	Mech. Eng.	Instructor in Mechanical Engineering, Rensselaer Polytechnic Institute.
21 Hawthorne Ave., Troy, N. Y.		
BATES, REUBEN CHARLES.	Civ. Eng.	Teacher, Longwood Day School.
36 Browne St., Brookline, Mass.		
BRETT, CLARENCE ELMER.	Agr.	Instructor in Poultry, R. I. S. C.
Kingston.		
BRIDEN, FRANK HAROLD.	Mech. Eng.	Supt. Dominion Works, Nicholson File Co.
Port Hope, Ontario, Canada.		
COHEN, BENJAMIN.	Elec. Eng.	Superintendent of Labor Records and Statistics, Air Nitrates Corporation.
P. O. Box 458, Muscle Shoals, Ala.		
CONGDON, ESTHER LOOMIS		
(MRS. ARTHUR L. REYNOLDS) Home Econ.	At home.	
26 Farmington Ave.,		
Waterbury, Conn.		
CORR, JOHN WILLIAM.	Appl. Sci.	Assistant Superintendent, Greenwich Bleachery.
East Greenwich.		

NAME AND ADDRESS.

COURSE.

OCCUPATION.

ELKINS, DOROTHY DEARBORN (MRS. ROBERT W. KENT)...	Home Econ.	At home.
1298 Commonwealth Ave., Boston, Mass.		
ELKINS, MARGUERITE WHITE,...	Home Econ.	Assistant Bact. Dept., U. S. General Hospital; Bacteriologist, U. S. Public Health Service, Fayette- ville, No. Carolina.
M. S., R. I. S. C., 1914. 10 Moody St., Amesbury, Mass.		
HART, CRAWFORD PECKHAM.....	Agr.	Principal, High School.
Waterbury, Vt.		
IRONS, WALTER COLWELL.....	Agr.	Farmer.
North Scituate.		
KYLE, THOMAS.....	Agr.	Plumber.
Balboa, Canal Zone.		
MITCHELL, IRVING CALVARY....	Appl. Sci.	Supt. of Schools, towns of Glouces- ter and Smithfield.
Greenville.		
REDDING, WILLIAM FRANCIS....	Elec. Eng.	Second Lieutenant, Infantry.
Porto Rico.		
REINER, WALDO.....	Civ. Eng.	Ensign, Civil Eng. Corps, N. R. F., Naval Aviation, Amer. Exped. Force.
45 Strong Place, Brooklyn, N.Y.		
REYNOLDS, ARTHUR LESLIE....	Elec. Eng.	Teacher, Math., High School.
26 Farmington Ave., Waterbury, Conn.		
SLOCUM, GEORGE EDWIN.....	Elec. Eng.	District Sales Mgr., Allen-Bradley Co.
75 W. Mohawk St., Buffalo, N. Y.		
*STECK, FRANK.....	Chem. Eng.	
TURNER, WALTER RAYMOND....	Appl. Sci.	Asst. Mgr., River Spinning Co., Valley Falls.
21 Sarah St., Providence.		
WILCOX, ERROLL KENYON.....	Civ. Eng.	Instructor in Science and Agricul- ture, High School.
72 Elm St., Stonington, Conn.		
WOOD, SUSIE STANTON.....	Home Econ.	Dietitian, U. S. Naval Hospital.
Portsmouth, N. H.		
YOUNG, JAMES HANNIBAL.....	Appl. Sci.	With National City Bank of New York.
151 Joralemon St., Brooklyn, N. Y.		

1914

ALDRED, JAMES HILTON.....	Mech. Eng.	With Woonsocket Rubber Co.
Ashton.		
ANDERSON, WILLIAM EDWARD.....	Agr.	Instructor, Agr. Chem. Dept., Univ. of Nebraska.
3237-R St., Lincoln, Nebraska.		
ASPINWALL, FREDERICK OTTO..	Chem. Eng.	First Lieutenant, Quartermaster Corps, Bureau of Fire Prevention American Expeditionary Force.
637 Main St., Pawtucket.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BAXTER, FRANK HOWARD. . . .	Mech. Eng.	Ensign, U. S. Naval Reserve.
44 Orkney Road, Brookline, Mass.		
BENSON, ROBERT JOHN.	Elec. Eng.	Electrical Maintenance and Con-
5963 Maple Ave.,		struction Engineer, Wagner Elec.
St. Louis, Mo.		Mfg. Co.
*BOULESTER, EDWARD JAMES. . . .	Appl. Sci.	
BROWNING, HAROLD WILLIAM. . . .	Appl. Sci.	Fellow in Botany.
M. S., Univ. of Wisconsin, 1916.		
Biology Building, Univ. of Wiscon-		
sin, Madison, Wisconsin.		
CONNOR, THOMAS ROWLEY.	Civ. Eng.	In Maintenance Dept., N. Y., N.
Peace Dale.		H. & H. R. R. Co.
DAVIS, HENRY ELLIS.	Agr.	Acting Mgr., R. I. Branch Ameri-
Providence.		can Surety Co., 936 Grosvenor
		Bldg., Providence.
ESTY, JAMES RUSSELL.	Chem. Eng.	Bacteriologist National Canners'
M. S., Brown University, 1915.		Association.
Ph. D., Brown Univ., 1918.		
1739 H St., Washington, D. C.		
FINCH, MYRON WHITMARSH.	Agr.	Assistant Instructor Phys. Train-
195 Morris Ave., Providence.		ing, Brown University.
FORD, HELEN WHEELER.	Home Econ.	With American Red Cross, Paris,
North Easton, Mass.		France.
HAWKINS, MYRON ANGELL.	Agr.	In charge of orchards, Singleton
Wallum Lake.		Farms.
JONES, CARLTON WALTER.	Civ. Eng.	Engineer.
Colonial Park, Woodland, Md.		
KARMANN, HERMAN HARRY.	Civ. Eng.	Surveyor.
156 Cardoni St., Detroit, Mich.		
KINNEY, LORENZO FOSTER, JR. . . .	Appl. Sci.	In Extension Service, R. I. S. C.
Kingston.		
REINER, FRIEDA.	Home Econ.	Associate Professor, Home Econ-
45 Strong Place,		omics Department, New Hamp-
Brooklyn, N. Y.		shire State College.
REINER, HERBERT.	Agr.	With American Agricultural Chem-
Portsmouth, N. H.		ical Co., 92 State St., Boston.
ROSSI, LOUIS.	Civ. Eng.	Civil Engineer and Draftsman.
57 Oak St., Westerly.		
SAFFORD, EDITH MARIE		At home.
(MRS. HERBERT REINER). . . .	Home Econ.	
Portsmouth, N. H.		
SULLIVAN, JOHN LEO.	Mech. Eng.	Teacher, Vocational High School.
9 Church Road, Newton, Mass.		
TULLY, WILLIAM HENRY.	Appl. Sci.	
Wakefield.		

NAME AND ADDRESS.

COURSE.

OCCUPATION.

TURNER, HARVEY ROBERT	Civ. Eng.	In charge of Science Dept., Sam Houston College, Austin, Texas.
137 East Manning St., Providence.		
WEBB, WILLIAM HARRY	Elec. Eng.	Ensign, U. S. Naval Reserve.
WEBSTER, EARL CLIFTON	Civ. Eng.	Second Lieutenant, Infantry, U. S.
67 Daboll St., Providence.		

1915

BALDWIN, GEORGE HOLLAND	Agr.	Agronomy Demonstrator, Extension Service, R. I. S. C.
Kingston.		
BARNEY, RAYMOND LIVINGSTON . .	Appl. Sci.	Director and Supt., U. S. Fisheries Biological Station.
Beaufort, North Carolina.		
BELFIT, ROBERT WILLIAM	Chem. Eng.	Chem. Engineer, Scovill Mfg. Co.
44 Willow St., Waterbury, Conn.		
BORDEN, NORMAN HARRISON . .	Chem. Eng.	Junior Chemist, Bureau of Chemistry.
2703 Eleventh St., N. W., Washington, D. C.		
BRECHIN, JOHN	Mech. Eng.	Inspector, Ordnance Dept., U. S. Navy, Pittsburg.
Wilksburg, Pa.		
BROWNELL, KENNETH ALLEN . .	Chem. Eng.	Chemist, River Spinning Co., Valley Falls.
22 Manchester St., Pawtucket.		
COLEMAN, CARL LAFAYETTE	Agr.	Farmer.
Allenton.		
DODGE, WILLIAM EARL	Civ. Eng.	Ensign, Executive Officer on Submarine Chaser, No. 294, care Postmaster, N. Y.
Block Island.		
GATES, CURTIS WOLCOTT	Chem. Eng.	First Lieutenant, 309th Inf. Co. Amer. Expeditionary Force.
50 Naumeag Ave., New London, Conn.		
HALL, CARLISLE	Agr.	Second Lieutenant, F. A., Amer. Expeditionary Force.
187 Althea St., Providence.		
HARDING, ADA LAPLACE	Home Econ.	Home Economics, County Agent, Southern R. I. Farm Bureau.
East Greenwich.		
HARRIS, LEON IRVING	Elec. Eng.	With Chalmers Motor Co.
465 Lycaste Ave., Detroit, Mich.		
HUDSON, ROYAL CARLTON	Appl. Sci.	Student, Harvard Medical School.
34 Mumford St., Phenix.		
HUNTER, ALBERT CLAYTON	Appl. Sci.	Microbiological Lab., Bureau of Chemistry, Dept. of Agr.
816 B St., S. W., Washington, D. C.		
JACKOWITZ, JOHN LOUIS	Appl. Sci.	Observer, 42nd Balloon Co., Amer. Expeditionary Force.
269 Martin St., East Providence.		
KEITH, LAWRENCE FULLER	Agr.	Captain Field Artillery.
2016 W. 23rd St., Little Rock, Arkansas.		
KIVLIN, ALFRED PATRICK	Elec. Eng.	Second Lieutenant, 301st Engineers.
43 School St., North Attleboro, Mass.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LENNOX, FRANK JOSEPH 916 Beacon St., Boston, Mass.	Chem. Eng.	Second Lieutenant, U. S. Army.
MEADE, JOHN EDWARD 95 Broadway, Providence.	Civ. Eng.	Civil Engineer, with N. Y., N. H. & H. R. R. Co.
MILLER, WESLEY CLIFTON Providence.	Elec. Eng.	Captain, Signal Corps, 53rd Artillery, C. A. C., Amer. Expeditionary Force.
NICHOLS, JOSEPH ELTON Woonsocket.	Mech. Eng.	Second Lieutenant, Field Artillery, U. S. Army.
NORDQUIST, HARRY O. VALDIMAR, Civ. Eng. 83 Hamlin St., Providence.	Civ. Eng.	Second Lieutenant, C. A. C., Fortress Monroe, Va.
PARKER, RALPH LANGLEY Brockton, Mass.	Agr.	Corporal, Co. F., 301st Supply Train, Amer. Exped. Force.
WATSON, ADELAIDE GILBERT (MRS. FRANK H. BRIDEN) . . . Port Hope, Ontario, Canada.	Home Econ.	At home.
WHITTAKER, LEROY ALLEN Fort Kamehameha, Honolulu, H. T.	Elec. Eng.	Captain, C. A. C.
WILCOX, HAROLD CLAYTON 1495 Franklin Ave., Columbus, Ohio.	Agr.	Teacher of Science, Columbus Academy.

1916

ALDRICH, DANIEL GASKILL Pittsfield, N. H.	Agr.	Head Master, Coe's Academy, and Pittsfield High School.
BECKER, WILLIAM JOSEPH, JR., Mech. Eng. 215 So. Van Dien Ave., Ridgewood, N. J.	Mech. Eng.	Chief Inspector, Inspection Div., Ordnance Dept., U. S. A.
BURR, DOROTHY ISABELLE (MRS. THOMAS W. FREEMAN), 66 Fenner Ave., East Providence.	Home Econ.	At home.
CARLETON, EVERETT AUGUSTUS Riverside Club, Penn's Grove, N. J.	Agr.	Chemist.
CHANTLER, AMBROSE ROYLE 130 West Ave., Pawtucket.	Chem. Eng.	Chemist, with E. I. DuPont De Nemours Co., Dyestuffs Div.
CONYERS, CLARENCE JOHN 142 Burnett St., Providence.	Agr.	Observer, 18th Balloon Co., U. S. Army, Amer. Exped. Force.
CORDIN, GILBERT RALPH 16 Harvard Ave., Providence.	Chem. Eng.	Captain, Quartermaster Corps, U. S. Army.
CURRAN, EMILIE MAY (MRS. NORMAN H. BORDEN), Washington, D. C.	Home Econ.	At home.
DANIELS, HENRY FALES 113 Barton St., Pawtucket.	Civ. Eng.	Sergeant, F Battery, 307th Field Artillery, 78th Division, Amer. Expeditionary Force.
FARON, FRANCIS ALOYSIUS 213 Seward Place, Schenectady, N. Y.	Elec. Eng.	Testing Dept., General Electric Company.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FIELD, ERNEST GEORGE..... 839 Stuyvesant Ave., Trenton, N. J.	Mech. Eng.	With Dehaval Steam Turbine Co.
FINE, SOLOMON..... M. S., R. I. S. C., 1917. 2202 Monroe St., Corvallis, Oregon.	Appl. Sci.	In Dairy Dept., Oregon Agricultural College.
FRASER, DEAN BLENUS..... Washington, D. C.	Civ. Eng.	Technical Section, Dept. Military Aeronautics.
FREEMAN, THOMAS WILLIAM.... 66 Fenner Ave., East Providence.	Civ. Eng.	First Lieutenant, Co. B, 52nd Inf.
GLASHEEN, RALPH EARLE.....	Civ. Eng.	Captain, C. A. C., Dept. Light Railways, Amer. Expeditionary Force.
*HANLIN, WILLIAM FRANK.....	Agr.	
HENRY, JAMES MURRAY..... Stonington, Conn.	Mech. Eng.	With Electric Boat Company, Groton, Conn.
HOLLEY, LEONARD STANLEY..... Wakefield.	Agr.	Farmer.
HOXSIE, ANNIE SARAH..... Newport.	Home Econ.	County Agent, Home Economics, Newport County.
KELLY, HENRY CLINTON..... 38 Eaton St., Providence.	Civ. Eng.	Private, Co. K, 23rd Engineers, Amer. Expeditionary Force.
LAGERSTADT, SETH FREDERICK HADLEY, Brockton, Mass.		Ensign, U. S. Naval Reserve.
LEWIS, WILLIAM EMANUEL..... 48 Rathbone St., Providence.	Agr.	With Providence Farmers' Exchange.
LLOYD, LESTER WILLIAM..... Kingston.	Agr.	Animal Husbandman, Extension Service, R. I. S. C.
LUSSIER, GEORGE EMILE..... 411 Rebecca Ave., Wilkesburg, Pa.	Elec. Eng.	Engineer, Westinghouse Elec. & Mfg. Co.
MCLEOD, LEANDER WALLACE... Bridgeport, Conn.	Mech. Eng.	With Ashcroft Mfg. Co.
MEDBURY, HENRY EDMUND..... East Providence.	Appl. Sci.	Corporal, Base Hospital No. 6, U. S. Army, Amer. Expeditionary Force.
MEEARS, ETTA ELIZABETH (MRS. ERNEST G. FIELD).... 839 Stuyvesant Ave., Trenton, N. J.	Home Econ.	At home.
MILNE'S, CHARLES IRVING..... 46 Priscilla Ave., Providence.	Chem. Eng.	Chemist, Wanskuck Co.
PALMER, THEODORE ANDREW..... Lakeville, Conn.	Agr.	Instructor in Dairying and Athletic Director, Riggs School.
PARKER, CLARENCE HOWARD... 119 Oakley Road, Belmont, Mass.	Mech. Eng.	Plant Engineer, Package Confectionery Co., South Boston.

* Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
PRICE, MILTON HARRIS.	Agr.	First Lieutenant, Cavalry, Fort Sam Houston, Texas.
29 Sessions St., Providence.		
RANDALL, BERTHA ADELAIDE. . .	Home Econ.	Chemist, New Jersey Zinc Co. of Pa.
424 Columbia Ave., Palmerston, Pa.		
RANDALL, PHINEAS MUNSELL. . .	Elec. Eng.	First Lieutenant, Headquarters Co. 5th F. A., Amer. Expeditionary Force.
Westerly.		
ROWELL, HOMER RANSOM.	Agr.	Private, Inf., Amer. Expeditionary Force.
Groveland, Mass.		
SEIFERT, CHARLES EDWARD. . . .	Elec. Eng.	Electric Welding Engineer.
4250 Langland St., Cincinnati, Ohio.		
SHORT, CARLETON WEBB.	Chem. Eng.	Private, Battery B, F. A., 51st Brigade, 103rd Regt., 26th Div., Amer. Expeditionary Force.
56 John St., East Providence.		
VICTORY, THOMAS FRANCIS. . . .	Elec. Eng.	First Lieutenant, C. A. C.
Warren.		
WALMSLEY, EARL.	Chem. Eng.	Captain, Co. L, 379th Infantry.
Anthony.		
YOUNG, VINCENT CASE.	Mech. Eng.	Second Lieutenant, 1st Marine Aviation Force, U. S. Marine Corps.
Bristol.		

1917

AMES, ARNOLD WILLARD.	Mech. Eng.	Shipbuilding, Fore River Plant.
18 Washington St., Quincy, Mass.		
ANDERSON, JOHN GORDON.	Appl. Sci.	Student, Harvard Medical School.
15 Newton St., Westerly.		
ANTHONY, HAROLD CONGDON.	Agr.	Second Lieutenant, Co. G, 167th Inf., Amer. Expeditionary Force.
Newport.		
BARTELS, HENRY ARTHUR.	Agr.	Bacteriologist, U. S. Public Health Service.
430 Elliot St., Alexandria, La.		
BROADFOOT, HENRY HARRINGTON,	Chem. Eng.	Teacher, West Warwick High School.
Westerly.		
BROWNE, ELIZABETH HOPE. . . .	Home Econ.	Home Econ. Demonstrator, Extension Service, Providence.
232 Cottage St., Pawtucket.		
CLARK, JAMES ANDREW.	Chem. Eng.	Chemist River Spinning Co. of Valley Falls.
39 Salina St., Providence.		
COHEN, HARRY.	Elec. Eng.	Assistant Examiner, U. S. Patent Office.
229 Patent Office, Washington, D. C.		
DUNHAM, LESLIE LINCOLN.	Agr.	Assistant County Agr. Agent.
Huntington, West Va.		
EASTERBROOKS, WILFRED ROSS. .	Civ. Eng.	Private, Battery A, 103rd Regt., F. A., 57th Brigade, 26th Div., Amer. Expeditionary Force.
Wakefield.		

NAME AND ADDRESS.

COURSE.

OCCUPATION.

EBBS, ROBERT ALLEN	Chem. Eng.	Second Lieutenant, 534th Engineers, Amer. Expd. Force.
34 Powell Ave., Newport.		
FLYNN, WILLIAM AUGUSTUS	Civ. Eng.	Ensign, U. S. Navy.
59 Beaufort St., Providence.		
GODDARD, FRANKLIN PERRY	Elec. Eng.	Shipbuilding, Fore River Plant, Quincy, Mass.
29 Gould St., Newport.		
HARRY, CHARLES EDWARD	Agr.	Instructor in Agriculture, Morehouse College.
Atlanta, Georgia.		
HAWKINS, CLINTON DEXTER	Chem. Eng.	Chemist, Page-Storms Drop Forge Co.
120 Springfield St., Chicopee, Mass.		
HILL, EDWIN DOUGLAS	Agr.	First Lieutenant, 318th Regt., 318th Mach. Gun Battery, Amer. Expeditionary Force.
3 Daboll St., Providence.		
JOHNSON, CHARLES VARNUM	Civ. Eng.	Engineer, R. I. State Board of Public Roads.
Peace Dale.		
KENDALL, DONALD JOHN	Agr.	Captain, 59th Co., 7th Regt., U. S. Marine Corps.
201 Pleasant St., Brockton, Mass.		
LAHN, ABRAHAM SAMUEL	Civ. Eng.	Assistant, Eng. Corps, Penn. R. R.
Fort Wayne, Indiana.		
LAWRENCE, SAMUEL EUGENE	Appl. Sci.	Captain, 106th Co., 8th Regt., U. S. Marine Corps.
84 Waller St.,		
New London, Conn.		
LEBOEUF, ALBERT ALPHONSE	Appl. Sci.	Captain, Base Detachment, 5th Regt. U. S. Marine Corps.
354 Hood St., Fall River, Mass		
McINTOSH, ALBERT EDWARD	Civ. Eng.	Captain, Co. C, 15th Cavalry, Amer. Expeditionary Force.
59 Lisbon St., Providence.		
PYNE, JAMES FRANCIS	Civ. Eng.	Ship Draftsman, Boston Navy Yard.
12 Gifford St., Brockton, Mass.		
REDFERN, ERNEST ELMER	Civ. Eng.	Asst. Supt., Pittsburgh Plate Glass Co.
Ford City, Pa.		
*REDFORD, DAVID ADAM	Mech. Eng.	Second Lieutenant, 75th Co., 6th Regt., U. S. Marine Corps, Amer. Expeditionary Force.
RIECKEL, GRACE LILLIAN		
(MRS. LESTER W. LLOYD) . .	Home Econ.	At home.
Kingston.		
RODMAN, SAMUEL LYMAN	Agr.	Farmer.
Gould.		
SLOCUM, KENNETH MATTESON	Civ. Eng.	Engineer, Cooley & Marvin Co,
Suite 15, 463 Audubon Road,		
Boston, Mass.		
SMITH, HAROLD BURLIN	Appl. Sci.	Clerical Work, W. F. Schrafft & Sons Corp., 160 N. Washington St., Boston, Mass.
25 Florence St.,		
Brockton, Mass.		

* Deceased.

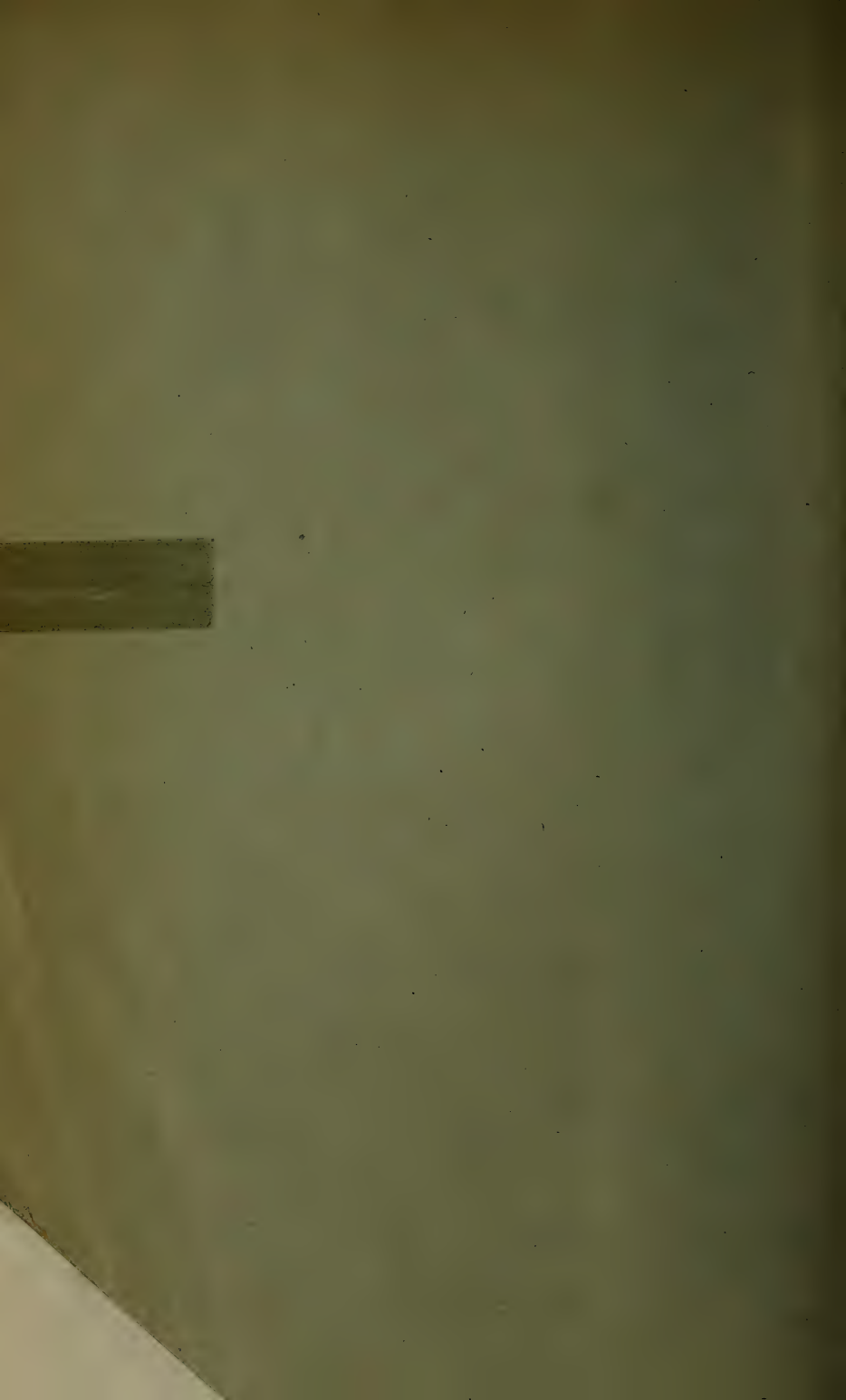
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Ipswich, Mass.		
TEW, JOSEPH GARDINER.....	Appl. Sci.	Graduate Student, Brown Univ.,
Phenix,		Asst. R. I. Board of Health.
THAYER, AUBREY HARVEY.....	Elec. Eng.	Asst. Physicist, Chief Branch Gage
East 22nd & Prospect Ave.,		Section, Bureau of Standards.
Cleveland, Ohio.		
TILLINGHAST, THEOSE ELWIN..	Mech. Eng.	First Lieutenant, Aviation Corps,
R. F. D. 1, Westerly.		Amer. Expeditionary Force.
WANSKER, HARRY ABE.....	Civ. Eng.	Ship Draftsman, Boston Navy
580 Commonwealth Ave., Boston, Mass.		Yard.
WELLES, ASHBEL RUSSELL.....	Agr.	First Lieutenant, Balloon Squad,
Wethersfield, Conn.		Aviation Section, Signal Offi-
		cers' Reserve Corps, Amer. Ex-
		peditionary Force.
WILLIAMSON, JAMES HUGH.....	Civ. Eng.	Captain, 185th Co., 15th Regt.,
Newport.		U. S. Marine Corps.
WISBEY, HERBERT ANDREW.....	Agr.	Principal, High School.
Mendon, Mass.		

1918

BARTON, HENRY, JR.....	Civ. Eng.	Foreign Service Class, Standard Oil
25 East 11th St., New York City.		Co. of N. Y.
BLAKE, NELSON EVERETT....	Chem. Eng.	With DuPont Powder Co.
Penn's Grove, N. J.		
CAMERON, LORNE ATWOOD.....	Agr.	
33 Oakes St., Everett, Mass.		
CHANDLER, RUTH WESTLAKE..	Home Econ.	Asst. Dietitian, St. Luke's Hospital.
New Bedford, Mass.		
COYNE, SARAH ELIZABETH....	Home Econ.	Teacher, Domestic Science, Leo-
1391 South Broadway,		minster, Mass.
East Providence.		
DEVINE, JAMES JOSEPH.....	Mech. Eng.	With F. W. D. Co., Clintonville,
61 Centre St., Bridgewater, Mass.		Wisconsin.
EDMINSTON, IRMA RATHBUN..	Home Econ.	Laboratory Technician, Base Hos-
East Greenwich.		pital, Camp Bowie, Texas.
GILLIS, WILLIAM ELLIS.....	Appl. Sci.	Instructor in Physics, Mercersburg
Box 103, West Kingston.		Academy, Mercersburg, Pa.
GROVES, LESTER DAVIS.....	Agr.	Supervisor, Burlington Co., Cow-
Mt. Holley, N. J.		Testing Association.
HAGGERTY, CHARLES WILLIAM..	Elec. Eng.	
Allenton.		
HASKELL, DOROTHY ESTELLE..	Home Econ.	Chemist and Bacteriologist, City
West Barrington.		Dept. of Milk Inspection, Providence.
KINNEY, ESTHER LEE.....	Home Econ.	Lunch-room Management.
1126 Boylston St., Boston, Mass.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LERMOND, CHARLES ELWYN. Sheffield, Alabama.	Mech. Eng.	Draftsman, Civil Service, U. S. Nitrate Plant No. 1.
LYNCH, DANIEL JOSEPH, JR. Brockton, Mass.	Mech. Eng.	Second Lieutenant, Co. E, 109th Eng., 34th Division, Amer. Ex- peditionary Force.
MYER, ARTHUR HENRY FRED'K, 139 Webster Ave., Providence.	Chem. Eng.	Chemist, Providence Gas Co.
SPARGO, RAYMOND ALEXANDER. Box 473, Westerly.	Agr.	Farmer.
STILLMAN, HANNAH AMELIA. Salem, West Virginia.	Home Econ.	Teacher of Science, High School.
STONE, ALBERT. Colonial Hotel, Penn's Grove, N. J.	Appl. Sci.	Chemist, Chlorine Intermediate Area, E. I. DuPont de Nemours Co., Deep Water, N. J.
STRAND, HENRY RICHARD. Newport.	Agr.	Farmer, Bethshan-in-the-Woods.
TORGAN, MILTON. 348 Orms St., Providence.	Appl. Sci.	Student, Harvard Medical School.
WANSKER, JOSEPH.	Chem. Eng.	First Sergeant, Water Analysis Laboratory, Base Section No. 7, Amer. Expeditionary Force.





BULLETIN OF RHODE ISLAND STATE COLLEGE

VOL. XVI. NO. 1.

FOR MAY, 1920

CATALOG OF THE COLLEGE



KINGSTON, R. I.

1920

PUBLISHED QUARTERLY BY THE COLLEGE

MAY, AUGUST, NOVEMBER, FEBRUARY

ENTERED AT KINGSTON, RHODE ISLAND, AS SECOND-CLASS MATTER

E. L. FREEMAN COMPANY, PRINTERS, PROVIDENCE

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RHODE ISLAND STATE COLLEGE

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 EXAMINATION OF ENTERING AND CONDITIONED STUDENTS.—Professors Merrow, Jackson, Coggins.

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WALTON H. SCOTT, B. S.	Assistant, Animal Breeding and Pathology
BERTHA M. HEATH, B. S.	Assistant, Animal Breeding and Pathology
NATHANIEL HELME.	Meteorologist

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H. ALIDA BIRCH.....	Librarian and Stenographer

Extension Service

MARGARET ARMSTRONG WILCOX.....	Stenographer
GRACE FLORENCE READ.....	Stenographer
HOPE ESSEX SWIFT.....	Filing Clerk

*In coöperation with U. S. Dept. of Agriculture.

†In coöperation with Dairy Division, Bureau of Animal Industry, U. S. Dept. of Agriculture and R. I. State Board of Agriculture.

‡ In coöperation with the United States Department of Agriculture and Farm Bureaus.

College Calendar

Monday, September 20, 1920, 9 A. M.

Examination of Entering and Conditioned Students

Tuesday, September 21, 9 A. M. Registration

Wednesday, September 22, 8 A. M. Recitations begin

Tuesday, October 12, holiday Columbus Day

Tuesday, November 2, holiday Election Day

Wednesday, November 24, 12 M.

Monday, November 29, 8 A. M. } Thanksgiving Recess

Friday, December 17, 4:35 P. M.

Monday, January 3, 1921, 8 A. M. } Christmas Recess

Friday, February 11, 4:35 P. M. First Term Ends

Tuesday, February 15, Registration, 9 A. M. Second Term Begins

Wednesday, February 16, 8 A. M. Recitations Begin

Tuesday, February 22, holiday Washington's Birthday

Wednesday, March 23, 4:35 P. M.

Tuesday, March 29, 1 P. M. } Easter Recess

April 16, 1 P. M. Third Quarter Ends

April 18, 8 A. M. Fourth Quarter Begins

Friday, May 13, holiday Arbor Day

Saturday, May 14. Interscholastic Field Meet

Monday, May 30, holiday Memorial Day

Sunday, June 19. Baccalaureate Address

Monday, June 20. Commencement Exercise

CALENDAR.

1920.

1921.

1920.							1921.						
JUNE.	MAY.	APRIL.	MARCH.	FEB.	JAN.		JUNE.	MAY.	APRIL.	MARCH.	FEB.	JAN.	
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18	19	20	21	22	23	24	16	17	18	19	20	21	22
25	26	27	28	29	30	31	23	24	25	26	27	28	29
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15	16	17	18	19	20	21	6	7	8	9	10	11	12
22	23	24	25	26	27	28	13	14	15	16	17	18	19
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18	19	20	21	22	23	24	10	11	12	13	14	15	16
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16	17	18	19	20	21	22	14	15	16	17	18	19	20
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13	14	15	16	17	18	19	5	6	7	8	9	10	11
20	21	22	23	24	25	26	12	13	14	15	16	17	18
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..	26	27	28	29	30

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RHODE ISLAND STATE COLLEGE

Foundation

The college is one of the so-called land-grant colleges. Of the purpose of these institutions Senator Morrill, the author of the national legislation which brought them into existence in all the states, says:

“The fundamental idea was to offer an opportunity in every state for a liberal and larger education to large numbers, not merely those destined to sedentary professions, but to those needing higher instruction for the world’s business, for the industrial pursuits and professions of life.” Again he says: “It was to give a chance to the industrial classes of the country to obtain a liberal education, something more than what was bestowed by our universities and colleges in general, which seemed to be based more on the English plan of giving education only to what might be called the professional classes, in law, medicine, and theology.”

The college has also a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows:

- (1) The interest on \$50,000, which was the net amount received by the State from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.
- (2) The annual appropriation of \$15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.
- (3) The annual appropriation of \$25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as follows:

"To be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the State under the Adams Act of 1906, yielding each year \$15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting yearly to \$25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The funds coming from the general government to the State under the Smith-Lever Act of 1914, amounting yearly to \$10,000. This funds is exclusively for extension work in agriculture and home economics.

(7) The annual maintenance fund from the State, of \$40,000, used for all the purposes for which the funds of the general government cannot be used: *e. g.*, for executive and administrative work; for heating, lighting, and maintenance of buildings; for the teaching of modern languages other than English; for the teaching of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroly revised during the years 1906-07 and 1907-08. The course in home economics for young women was introduced in 1908.

Object and Organization

The function of Rhode Island State College is to aid in fostering the agricultural, industrial, and home-making life of the State. This it does in three ways: 1. by the investigation and discovery of new truths more or less directly applicable in agriculture and the industries; 2. by the direct distribution of information to the people; 3. by the organization and administration of definite courses of instruction designed to fit young men and young women for effective work in the vocational pursuits.

The first of these duties is performed by the

Experiment Station

for a description of the work of which the reader is referred to the report of the director, included in the report of the Board of Managers for the current year. A statement of its staff organization may be found on page 6 of this catalog.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all who desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, the

College Extension Division

is organized under provisions of the Smith-Lever Act, according to the recommendations of the Federal Department of Agriculture and the present prevailing practices thruout the country. The work is now arranged on a project basis and the following is a summary of the projects formulated and approved and now in force.

PROJECT NO. 1. ADMINISTRATION: This project outlines plans for organization and supervision of all the different lines of work in the Extension Division, including arrangements of budgets, organization of office work, preparation and distribution of publications, employment and supervision of workers, preparing reports of work, approval of requisitions for supplies and in general coördinating all the different activities in this branch of the college. The work is placed in charge of a Director of Extension, who is also State Leader of County Agents.

PROJECT NO. 2. COUNTY AGENT WORK: This project provides that there shall be organized in the State three farm bureau districts and that the college and the U. S. Department of Agriculture will coöperate with each of the three Farm Bureaus in the employment and supervision of a county agricultural agent. All county agents are assisted by the State Leader and by Extension Committees at the College in formulating projects for the work suggested by the Farm Bureau organizations, local Farm Bureau Committees, or by the college, and so far as possible specialists from the college aid the agents in carrying out the work under these projects.

PROJECT NO. 3. HOME ECONOMICS: A State Leader in Home Economics Extension work is engaged to organize and conduct extension work thruout the State, for the purpose of giving instruction by means of demonstrations, personal conferences, lectures, publications, correspondence, and otherwise, concerning,—(a) Foods; their characteristics, nutritive qualities, and economical production; selection and preservation, preparation and serving. (b) Fabrics; their qualities and adaptations, methods of making into clothing and articles for household use; approved methods and agents used in laundering; care and preservation. (c) House planning; remodeling, rearrangements to secure convenience in household work and management; effective heating, lighting, water supply and sewage disposal systems. (d) Household management; the proper furnishing and keeping of the house for the purpose of economic efficiency, comfort and beauty together with simple methods of household accounting. (e) Home industries of such nature as may fit in with broad types of farming and with the financial resources, tastes, and ambitions of particular families or groups of families in relation to supplying home needs and accessible markets.

So far as finances permit, Farm Bureaus will be encouraged to employ home demonstrators and as soon as a home demonstrator is settled in a farm bureau, home economics work in that district will be carried on in coöperation with the Farm Bureau, the State Leader being recognized as joint supervisor of the work with the Farm Bureau.

PROJECT NO. 4. CLUB WORK: A State Leader with such district assistance as circumstances warrant and funds will permit is employed to conduct demonstrations with boys and girls in farm and home activities; and to organize them into clubs that take up special projects with field crops and home gardens, home canning, also poultry, pigs, and other farm animals. Instruction is given in methods of marketing crops and animals and the best way to save the surplus food products by home canning and how to prepare the canned goods for table use or to market them. Efforts are made to furnish the clubs with local leadership and field instructions essential to success in the work.

A sub-project providing for special extension work in poultry husbandry has been arranged through the coöperation of the Bureau of Animal Industry and the Extension Division in the employment of a poultry club specialist.

Projects 5, Agronomy, and 6, Poultry Husbandry, have been dropped for want of funds with which to carry them on.

PROJECT NO. 7. Dairy Extension: A dairy specialist is employed in coöperation with the Dairy Division of the Bureau of Animal Industry, United States Department of Agriculture and the Rhode Island State Board of Agriculture for the purpose of giving advice to farmers concerning the care, feeding and management of dairy cattle, improving herds and raising of calves, erection of silos, and construction and remodeling of dairy buildings. Herd records will be introduced and assistance given in the selection of pure-bred dairy bulls and high grade cows. Special emphasis will be given to the organization and supervision of cow testing associations and bull associations where a sufficient number of cows are found.

Engineering Extension Work

In the engineering department, as well as in the other branches of the college, the endeavor is to be of the greatest possible service to the people of the State, not only in the matter of providing formal instruction to students coming to the college, but also in giving help and information to those outside the college enrollment who are desirous of extending their technical knowledge, and to whom, for one reason or another, a regular college course is impossible.

To this end there has been offered in the past a short course of two years' duration, in which instruction has been given in the elements of engineering. Experience, however, has shown that those most eager to avail themselves of this kind of instruction, and those who would be most helped by it, are unable to leave their regular duties to attend classes at the college.

As a consequence, the short course work in engineering at the college has been discontinued, and in its place has been inaugurated the plan of extension work in engineering. Instead of taking the man away from his regular duties to bring him to the work, the present plan is to carry the work to the man.

This extension work is carried out in two chief ways,—by means of separate lectures on specific topics, and by means of progressive study in organized classes. The subjects presented are all of a technical character and are adapted to the particular needs and capabilities of the classes.

The present requirements for such class work are that a suitable place for meeting be provided, and that the attendance be regular. This regularity of attendance is a matter of the greatest importance, since without it little or no progress is possible.

Classes have been conducted in various places in The Use of the Slide Rule, Mechanism and Shop Calculations, Power Plant Computations, etc. Instruction in these and any other desired branch of engineering may be had by citizens of the State by complying with the requirements mentioned, the number of such courses being limited only by the available time of the members of the department. Also lecturers will be provided to present various phases of engineering before technical organizations and engineering societies.

The College as an Educational Agency

In its third form of activity, the purpose and work of Rhode Island State College is to give college training and culture to young men and young women, not in spite of, but thru and with, vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroly efficient worker.

I. THE DEGREE COURSES

To this end certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in mathematics, pure and applied; the English language as a means of intercommunication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses, moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-winning, but also preparation for citizenship, and for moral and social

life, have intertwined with the vocational work and study, previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools. They thus become an integral part of the school system of the State. Young men and young women, citizens of the State and having requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are agriculture, engineering, applied science and home economics, and commencing in September 1919, vocational education courses in agriculture and home economics together with a two-year course (based on a recognized two-year normal school course) leading to the degree of Bachelor of Education.

The Agricultural Course

The agricultural course is intended to give thoro preparation for taking charge of and operating a piece of landed property. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thoro study of the sciences bearing directly on such work, viz.: botany, chemistry, geology, zoölogy, anatomy, physics, bacteriology, and entomology. In addition, it embraces the culture and mental discipline arising from the study of mathematics, drawing, English literature, composition and rhetoric, modern languages, history, economics. The course is planned to give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first and second years; in the second half of the junior year, in addition to the required work for all students in the course, two optional lines of work are offered, one of which must be selected by the student and followed until graduation. The two lines offered are horticulture and animal husbandry. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. All candidates for a degree in the agricultural course are

required to spend at least six months in practical farm work before the degree is granted. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition.	3	English I—Rhetoric and Composition.	3
Math. III—Algebra.	2½	Chemistry II—General Chem. and Qualitative Analysis.	3 [1½]
Math. II—Trigonometry.	2½	Botany I ₂ —General.	1 [2]
Chemistry I—General.	2 [1½]	An. Husb. I—Stock Judging.	[2]
Botany I ₁ —General.	1 [2]	An. Husb. III—Breeds.	2
Hort. I—Propagation of Plants.	1 [1]	Hort. II—Vegetable Gardening.	2
Art II—Pencil Drawing.	[1]	Hort. IV—Spraying and Pruning.	1 [1]
Mil. Sci. and Tactics I ₁ —Drill.	[1]	Mil. Sci. and Tactics I ₂ —Drill.	[1]
Mil. Sci. and Tactics II ₁ —Theory.	1	Mil. Sci. and Tactics II ₂ —Theory.	1

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.	3	English III—Argumentation.	2
Chemistry IVb—Organic Chemistry.	3 [1]	Chemistry XIV—Agricultural Chemistry.	4
Botany II—Botany of Crops and Weeds.	1 [2]	Physics I—Descriptive Physics.	5
Botany III ₁ —Trees and Shrubs.	[1]	Botany III ₂ —Trees and Shrubs.	[1]
Zoology Xa—Vertebrate Zoology.	2 [2]	Zoology Xb—Vertebrate Zoology.	2 [2]
Civil Engineering I—Surveying.	1 [2]	Geology I.	2
Mil. Sci. and Tactics I ₂ —Drill.	[1]	Mil. Sci. and Tactics I ₂ —Drill.	[1]
Mil. Sci. and Tactics IV ₁ —Theory.	1	Mil. Sci. and Tactics IV ₂ —Theory.	1

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IX—Debating.	1	Agronomy IV—Farm Crops.	3 [1]
An. Husb. X—Vet. Practice.	3	Agronomy VII—Farm Management.	2
An. Husb. XIIa—Poultry Culture.	1	History I—Industrial History.	3
Agron. III—Soils and Fertilizers.	4 [1½]	or	
Hort. III—Fruit Culture.	2	Mil. Sci. and Tactics V ₂ —Theory.	
Hort. XVI—Landscape Gardening.	1 [2]	Mil. Sci. and Tactics I ₂ —Drill.	1
English IV—Modern Essays.	3	or	
or		Physical Training.	
Mil. Sci. and Tactics V ₁ —Theory.		Options: A. or B.	All of the subjects in one of the following groups must be chosen.
Mil. Sci. and Tactics I ₂ —Drill.	[1]	A. Horticulture	
Physical Training.		or	
		Botany IV—Forestry.	[2]
		or	2 [1]
		Hort. XVII—Small Fruits.	
		Zoology IV—Economic Entomology.	3 [1]
		Elective.	3 or 4
		B. Animal Husbandry	1 [2]
		An. Husb. VII—Dairy Practice.	
		Agronomy VI—Farm Machinery.	2 [1]
		Elective.	4

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	English V—Shakespeare.....	3
An. Husb. VI—Feeds and Feeding....	3	Agronomy X—Agricultural Experimentation.....	3
Agronomy XI—Plant Breeding.....	3	Agronomy XIII—Marketing Farm Products.....	[1 [2]
Agronomy XII—Farm Accounts.....	1 [2]	Mil. Sci. and Tactics VI ₁ —Theory..	} 3
Mil. Sci. and Tactics VI ₁ —Theory..	} 3	or	
Elective.....		Mil. Sci. and Tactics VI ₂ —Theory..	} 3
Elective.....	3	or	
Mil. Sci. and Tactics I ₇ —Drill.....	} 1	Mil. Sci. and Tactics I ₈ —Drill.....	} 1
or		or	
Physical Training.....	1	Physical Training.....	
Options: A. or B.		Options: A. or B.	
		All of the subjects in one of the following groups must be chosen.	
<i>A. Horticulture</i>		<i>A. Horticulture</i>	
Hort. X—Pomology.....	1 [2]	Botany IV—Forestry.....	[2]
		or	
<i>B. Animal Husbandry</i>		Hort. XVII—Small Fruits.....	2 [1]
Elective.....	3	Elective.....	3 or 4
		<i>B. Animal Husbandry</i>	
		An. Husb. IV—Breeding.....	3
		Elective.....	3

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Engineering Course

The engineering course has the same duration and the same general plan as that usually offered in the standard technical colleges. Students will follow the course as laid down until the sophomore year, at which time they must elect one of the four optional lines offered, viz.: mechanical, electrical, civil, and chemical engineering. Any line of work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and efficient work in the great manufacturing and commercial industries of the State; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. The tabulated course follows:

Freshman Year

For the first year the course is the same for all students of engineering.

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition.	3	English I—Rhetoric and Composition.	3
Math. I—Algebra.	2½	Math. VIIIa—Analytics.	5
Math. II—Trigonometry.	2½	Chemistry II—General Chemistry and Qualitative Analysis.	3 [1½]
Chemistry I—General.	2 [1½]	Mech. Eng. V—Descriptive Geometry.	1 [2]
Mech. Eng. I—Mechanical Drawing.	[4]	Mech. Eng. III—Pattern Making.	[2]
Mech. Eng. II—Forge and Foundry.	[2]	Mil. Sci. and Tactics I ₂ —Drill.	[1]
Mil. Sci. and Tactics I ₁ —Drill.	[1]	Mil. Sci. and Tactics II ₂ —Theory.	1
Mil. Sci. and Tactics II ₁ —Theory.	1		

MECHANICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.	3	English III—Argumentation.	2
Physics II ₁ —General.	4	Physics II ₂ —General.	4
Physics III ₁ —Laboratory.	[1½]	Physics III ₂ —Laboratory.	[1½]
Math. X—Calculus.	5	Math. XI—Calculus.	5
Mech. Eng. VI ₁ —Mechanical Drawing	[2]	Mech. Eng. VI ₂ —Mechanical Drawing	[2]
Civil Eng. I—Surveying.	1 [2]	Mech. Eng. XII—Mechanism.	3
Mil. Sci. and Tactics I ₃ —Drill.	[1]	Mil. Sci. and Tactics I ₄ —Drill.	[1]
Mil. Sci. and Tactics IV ₁ —Theory.	1	Mil. Sci. and Tactics IV ₂ —Theory.	1

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.	3	History I—Industrial History.	3
Mil. Sci. and Tactics V ₁ —Theory.	1	Mil. Sci. and Tactics V ₂ —Theory.	3
English IX—Debating.	[3]	Mech. Eng. IX ₂ —Heat Engineering.	1½
Mech. Eng. VIII—Machine Drafting.	3	Mech. Eng. X ₂ —Applied Mechanics.	3½
Mech. Eng. IX ₁ —Heat Engineering.	5	Mech. Eng. XI—Hydraulics.	3
Mech. Eng. X ₁ —Applied Mechanics.	[3]	Mech. Eng. XIII—Valve Gears.	[3]
Mech. Eng. XIV—Machine Shop.	1 [1]	Mech. Eng. XIV—Machine Shop.	[3]
Mech. Eng. XV—Experimental Engineering a.	[1]	Mech. Eng. XVI—Experimental Engineering b.	1 [1]
Mil. Sci. and Tactics I ₅ —Drill.	[1]	Mil. Sci. and Tactics I ₆ —Drill.	[1]
Physical Training.		Physical Training.	

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.	3	Mech. Eng. XVIII—Experimental Engineering d.	[2]
Mech. Eng. XVII—Experimental Engineering c.	2 [1½]	Mech. Eng. XIX—Heating and Ventilation.	1
Mech. Eng. XX—Machine Design.	[3]	Mech. Eng. XX—Machine Design.	[3]
Mech. Eng. XXI—Power Plants and Design.	2 [1]	Mech. Eng. XXII—Assigned Work.	3
Mech. Eng. XXII—Assigned Work.	3	Mil. Sci. and Tactics V ₃ —Theory.	2
Mil. Sci. and Tactics VI ₁ —Theory.	3	Mech. Eng. XXIII—Dynamics of Machines.	3
Elec. Eng. I—Theory of Direct Currents.	3	Mech. Eng. XXVI—Business Organization and Management.	2
Mil. Sci. and Tactics I ₇ —Drill.	[1]	Elec. Eng. IV—Theory of Alternating Currents.	2
Physical Training.		Elec. Eng. II—Direct Current Laboratory.	[3]
		Mil. Sci. and Tactics I ₈ —Drill.	[1]
		Physical Training.	

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

ELECTRICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.....	3	English III—Argumentation.....	2
Physics II ₁ —General.....	4	Physics II ₂ —General.....	4
Physics III ₁ —Laboratory.....	[1½]	Physics III ₂ —Laboratory.....	[1½]
Math. X—Calculus.....	5	Math. XI—Calculus.....	5
Mech. Eng. VI ₁ —Mechanical Drawing.....	[2]	Mech. Eng. VI ₂ —Mechanical Drawing.....	[2]
Civ. Eng. I—Surveying.....	1 [2]	Mech. Eng. XII—Mechanism.....	[3]
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Mil. Sci. and Tactics IV ₁ —Theory.....	1	Mil. Sci. and Tactics IV ₂ —Theory.....	1

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory.....	1	Mil. Sci. and Tactics V ₂ —Theory.....	[3]
English IX—Debating.....		Elec. Eng. II—Direct Current Lab.....	
Elec. Eng. I—Theory of Direct Currents.....	3	Elec. Eng. IV—Theory of Alternating Currents.....	2
Mech. Eng. VII—Machine Shop.....	[3]	Mech. Eng. IX ₂ —Heat Engineering.....	3
Mech. Eng. IX ₁ —Heat Engineering.....	3	Mech. Eng. X ₂ —App. Mechanics.....	1½
Mech. Eng. XI—App. Mechanics.....	5	Mech. Eng. XI—Hydraulics.....	3½
Mil. Sci. and Tactics I ₅ —Drill.....	[1]	Mech. Eng. XVI—Exp. Engineering b.....	1 [1]
or		Mil. Sci. and Tactics I ₆ —Drill.....	[1]
Physical Training.....		or	
		Physical Training.....	

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Elec. Eng. V—Theory of Alternating Currents.....	3
Elec. Eng. V—Theory of Alternating Currents.....	3	Elec. Eng. VI—Alt. Current Lab.....	[3]
Elec. Eng. VI—Alt. Current Laboratory.....	[3]	Elec. Eng. VII—Design of Electrical Machinery.....	[3]
Physics V—Electrical Meas.....	[1½]	Elec. Eng. VIII—Telephone Engineering.....	1
Physics VI—Prin. of Illumination.....	1 [1½]	Elec. Eng. X—Electric Power Transmission.....	4
Mil. Sci. and Tactics VI ₁ —Theory.....	[3]	Elec. Eng. XI—Electric Railways.....	2
Mech. Eng. XVII—Experimental Engineering c.....	2 [1½]	Elec. Eng. XII—Assigned Work.....	[3]
Mech. Eng. XXI—Power Plants.....	2	or	
Mil. Sci. and Tactics I ₇ —Drill.....	[1]	Mil. Sci. and Tactics VI ₂ —Theory.....	[1]
or		Mil. Sci. and Tactics I ₈ —Drill.....	
Physical Training.....		or	
		Physical Training.....	

CIVIL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.....	3	English III—Argumentation.....	2
Physics II ₁ —General.....	4	Physics II ₂ —General.....	4
Physics III ₁ —Laboratory.....	[1½]	Physics III ₂ —Laboratory.....	[1½]
Math. X—Calculus.....	5	Math. XI—Calculus completed.....	5
Civil Eng. I—Surveying.....	1 [2]	Mech. Eng. VI ₂ —Mechanical Drawing.....	[2]
Mech. Eng. VI ₁ —Mechanical Drawing.....	[2]	Mech. Eng. VII—Machine Shop.....	[1½]
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Civil Eng. II—Topographic Surveying.....	1 [2]
Mil. Sci. and Tactics IV ₁ —Theory.....	1	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
		Mil. Sci. and Tactics IV ₂ —Theory.....	1

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays..... } or Mil. Sci. and Tactics V ₁ —Theory... }	3	History I—Industrial History..... } or Mil. Sci. and Tactics V ₂ —Theory... }	3
English IX—Debating.....	1	Civil Eng. III ₂ —Railroad Engineering..	3
Civil Eng. III ₁ —Railroad Engineering..	5	Civil Eng. V—Roads and Pavements..	3 [1]
Civil Eng. IV—Graphic Statics.....	2	Mech. Eng. X ₂ —Applied Mechanics..	1½
Mech. Eng. X ₁ —Applied Mechanics.....	5	Mech. Eng. XI—Hydraulics.....	3½
Mech. Eng. IX ₁ —Heat Engineering...	3	Mech. Eng. XVI—Experimental Engi- neering b.....	1 [1]
Mil. Sci. and Tactics I ₅ —Drill.....	[1]	Geology I.....	2
or		Mil. Sci. and Tactics I ₅ —Drill.....	[1]
Physical Training.....		or	
		Physical Training.....	

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Civil Eng. VIII—Bridge Design.....	3 [3]
Mech. Eng. XVII—Experimental En- gineering c.....	2 [1½]	Civil Eng. IX—Masonry.....	2 [1]
Civil Eng. VI—Bridge Details.....	[2]	Civil Eng. X—Reinforced Concrete..	2
Civil Eng. VII—Bridge Analysis.....	2	Civil Eng. XII—Water Supply.....	3
Civil Eng. XI—Sewerage.....	2	Civil Eng. XIV—Contracts and Speci- fications.....	2
Elec. Eng. I—Theory of Direct Cur- rents.....	3	Elec. Eng. IV—Theory of Alternating Currents.....	2
Civil Eng. XV—Assigned Work.... }	3	Civil Eng. XV—Assigned Work.... }	3
or		or	
Mil. Sci. and Tactics VI ₁	[1]	Mil. Sci. and Tactics VI ₂	
Mil. Sci. and Tactics I ₇ —Drill.....		Mil. Sci. and Tactics I ₈ —Drill.....	1
or		or	
Physical Training.....		Physical Training.....	

CHEMICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.....	3	English III—Argumentation.....	2
Physics II ₁ —General.....	4	Physics II ₂ —General.....	4
Physics III ₁ —Laboratory.....	[1½]	Physics III ₂ —Laboratory.....	[1½]
Math. X—Calculus.....	5	Math. XI—Calculus.....	5
Chemistry III—Qualitative Analysis..	[3]	Mech. Eng. XII—Mechanism.....	3
Mech. Eng. VI ₁ —Mechanical Drawing..	[2]	Chem. XXIII.....	[2]
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
Mil. Sci. and Tactics IV ₁ —Theory....	1	Mil. Sci. and Tactics IV ₂ —Theory....	1

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays..... } or Mil. Sci. and Tactics V ₁ —Theory.. }	3	History I—Industrial History..... } or Mil. Sci. and Tactics V ₂ —Theory... }	3
English IX—Debating.....	1	Mech. Eng. X ₂ —Applied Mechanics..	1½
Mech. Eng. X ₁ —Applied Mechanics.....	5	Mech. Eng. XI—Hydraulics.....	3½
Chemistry VII—Gravimetric Analysis..	[3]	Chemistry VIII—Volumetric Analysis..	[5]
Chemistry XVI—Industrial Chemistry..	4	Chemistry XII—Physical Chemistry alternating with	4
Chemistry IV _a —Organic Chemistry.....	3 [1½]	Chemistry V—Organic Chemistry..	
Mil. Sci. and Tactics I ₅ —Drill.....	[1]	Chemistry VI—Organic Chemistry... }	[3]
or		Mil. Sci. and Tactics I ₆ —Drill.....	[1]
Physical Training.....		or	
		Physical Training.....	

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Chem. XII—Physical Chemistry... }	4
Elec. Eng. I—Theory of Direct Currents.....	3	Chem. V—Organic Chemistry..... }	
Mech. Eng. IX ₁ —Heat Engineering...	3	Chem. XX—Assigned Work..... }	3
Chem. XVII—Industrial Chemistry...	[3]	or	
Chem. XXI—Reports and Discussions.	2	Mil. Sci. and Tactics VI ₂ —Theory..	2
Chem. XX—Assigned Work..... }	3	Chem. XXI—Reports and Discussions.	
or		Mech. Eng. IX ₂ —Heat Engineering..	1½
Mil. Sci. and Tactics VI ₁ —Theory..	[1]	Mech. Eng. XXVI—Indus. Organization and Management.....	
Mil. Sci. and Tactics I ₇ —Drill.....		Chem. XVII.....	[3]
or		Chem. XXII—Organic or Physical	[2]
Physical Training..... }		Chemical Laboratory.....	
		Mil. Sci. and Tactics I ₈ —Drill..... }	[1]
		or	
		Physical Training..... }	

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Course in Applied Science

This course offers to the student opportunity to prepare either for teaching or for any one of several other distinct vocational pursuits, such as the application of botany, zoölogy, chemistry, and bacteriology to practical industrial problems. In these subjects, as well as in agriculture, the Vocational Science Course makes specialization possible. In addition, the course is so constructed that the student, although specializing, may come in touch with subjects that possess wider cultural significance and insure that broader outlook upon life which should characterize the educated man.

The general plan of the course is to give primarily, a foundation in the sciences of chemistry, physics, and biology; also to give the student an acquaintance with history and literature and an efficient command of good English. The course offers, at the beginning of the Junior year, options in Agriculture, Biology, and Chemistry. One of these the student must select in addition to certain studies required of all. Opportunity either for further specialization within the option, or for gaining a broader training in unrelated studies is afforded thru a limited number of elective subjects.

The nature and aim of these several options are as follows:

THE AGRICULTURAL OPTION

This option combines the broad scientific training of the Applied Science Course with the fundamental subjects given in the Agricultural Course. It thus affords a basis for investigational work in subjects related to agriculture.

With the introduction of agriculture into the secondary and grade schools, there was created a demand for teachers and superintendents who had received, in addition to work in the sciences and education, training in the broad field of agriculture. This option therefore furnishes preparation in those fundamental subjects in Agronomy, Animal Husbandry, and Horticulture which will enable the graduates from this course acceptably to fill positions as instructors and principals of agricultural high schools or as superintendents of schools in rural communities.

THE BIOLOGICAL OPTION

The Biological Option offers training in the applications of biological science to the problems of modern life. The great growth of agricultural investigation in recent years has created a demand for trained workers in applied biology. In the state experiment stations and the federal government bureaus, opportunities are offered for the investigation of problems in plant physiology and pathology, economic entomology, animal nutrition and animal pathology. State and federal inspection of plants and animals, and the problems of the control of plant and animal diseases offer further opportunities for workers trained in biological subjects. The scope of public hygiene and sanitation is increasing each year and has created a growing demand for trained workers in federal, state, and municipal health service. In addition, such students are well equipped to undertake graduate work in other institutions, or to begin the study of medicine.

THE CHEMICAL OPTION

The subjects in Chemistry are designed to train the student in theoretical and descriptive inorganic and organic chemistry; to give him a working knowledge of the various branches of chemical analysis; and to familiarize him with the practical applications of chemistry. The course is well adapted to prepare students for teaching, for experiment-station work, for graduate work in chemistry, or for positions in industries which involve chemical processes. Such industries include the bleaching and dyeing of cotton, silk and wool, the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, paper, soap, paint and varnish, the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion or by destructive distillation to form gas, coke and tar, embracing the entire field of

forest-products industries. In addition the course is intended to prepare particularly for the more specialized chemical industries such as the manufacture of chemicals and the manufacture and application of dyestuffs.

Freshman Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
German or French.....	3	German or French.....	3
Math. I—Algebra.....	2½	Math. VIIIb.....	4
Math. II—Trigonometry.....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3[1½]
Chemistry I—General.....	2[1½]	Botany I ₂ —General.....	1[2]
Botany I—General.....	1[2]	Art II ₂ —Pencil Drawing.....	1[1]
Art II ₁ —Pencil Drawing.....	1[1]	Mil. Sci. and Tactics II ₂ —Theory.....	1
Mil. Sci. and Tactics II ₁ —Theory.....	1	Mil. Sci. and Tactics I ₂ —Drill.....	1
or		or	
Home Economics III—Hygiene.....	1	Physical Training.....	[1]
Mil. Sci. and Tactics I ₁ —Drill.....	[1]		
or			
Physical Training.....	[1]		

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.....	3	English III—Argumentation.....	2
Chemistry IVb—Organic.....	3 [1]	French or German.....	3
or		Chemistry XXIII—Elective.....	[2]
Chemistry III—Qualitative Analysis..	[3]	Geology I.....	2
French or German.....	3	Zoology Xb—Anatomy and Physiology	2 [2]
Zoology Xa—General.....	2 [2]	Physics II ₂ —General.....	4
Physics II ₁ —General.....	4	Physics III ₂ —Laboratory.....	1[½]
Physics III ₁ —Laboratory.....	1[½]	Elective.....	3
Mil. Sci. and Tactics IV ₁ —Theory.....	1	Mil. Sci. and Tactics IV ₂ —Theory.....	1
Mil. Sci. and Tactics I ₃ —Drill.....	[1]	Mil. Sci. and Tactics I ₄ —Drill.....	[1]
or		or	
Physical Training.....	[1]	Physical Training.....	[1]

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V ₁ —Theory.....	1	Mil. Sci. and Tactics V ₂ —Theory.....	3
English IX—Debating.....	3	Psy. and Ed. III—Rhode Island Education.....	3
Psy. and Ed. IV—General Psychology.....	3	Mil. Sci. and Tactics I ₆ —Drill.....	[1]
Mil. Sci. and Tactics I ₅ —Drill.....	[1]	or	
or		Physical Training.....	[1]
Physical Training.....	[1]	Options: A, B or C. All of the subjects in one of the following groups must be chosen:	
Options: A, B or C. All of the subjects in one of the following groups must be chosen:		A. Agriculture	
A. Agriculture		Agronomy IV—Farm Crops.....	3 [1]
Agronomy III—Soils.....	1½ [4]	Zoology IV—Economic Entomology.....	3 [1]
Horticulture I—Propagation of Plants.....	1 [1]	Botany IV—Forestry.....	1 [1]
Elective.....	3	alternating with	
B. Biology		Horticulture IV—Spraying and Pruning.....	1 [1]
Zoology VIIIa—Histology.....	3	Elective.....	3
or		B. Biology	
Agronomy XI—Plant Breeding.....	1 [4]	Zoology VIIIb—Embryology.....	2 [1]
Botany V—Plant Histology.....	3	or	
Elective.....	3	Zoology II—Field Zoology.....	1[½]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Junior Year—Concluded.

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
<i>C. Chemistry.</i>		<i>B. Biology—Concluded.</i>	
Chemistry VII—Quantitative Analysis.	[3]	Botany VI—Plant Pathology.....	1 [4]
Chemistry IVa—Organic.....	3 [1½]	Zoology I—Invertebrate Zoology....	1 [3]
Chemistry XVI—Industrial Chemistry.	4	Chemistry XIX—Physiological } Chemistry.....	4
		Elective.....	3
		<i>C. Chemistry.</i>	
		Chemistry VIII—Quantitative Analy- sis.....	[5]
		Chemistry VI—Organic Laboratory...	[3]
		Chemistry XII—Physical Chemistry alternating with	4
		Chemistry V—Advanced Organic...	

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	English V—Shakespeare.....	3
Psy. and Ed. II—Prin. of Education..	3	Psy. and Ed. II—History of Educa- tion.....	3
Mil. Sci. and Tactics VI—Theory... } or	3	Mil. Sci. and Tactics I _s —Drill.... } or	3
Elective.....		Elective.....	
Mil. Sci. and Tactics I _r —Drill..... } or	[1]	Mil. Sci. and Tactics I _s —Theory... } or	[1]
Physical Training.....		Physical Training.....	
Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:		Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:	
<i>A. Agriculture.</i>		<i>A. Agriculture.</i>	
An. Hus. XIV—Poultry.....	[2]	Horticulture II—Vegetable Gardening.	2
Horticulture X—Pomology.....	1 [2]	Animal Husbandry IV—Breeding.....	3
Horticulture XVI—Landscape Garden- ing.....	1 [2]	Animal Husbandry VI—Feeding.....	3
<i>B. Biology.</i>		<i>B. Biology.</i>	
Agronomy XI—Plant Breeding.... } or	3	Chemistry XIX—Physiological Chemis- try.....	4
Zoology VIIIa—Histology..... } Assigned Biological Work.....	[3]	Zoology I—Invertebrate Zoology....	1 [3]
	3	Assigned Biological Work.....	3
<i>C. Chemistry.</i>		Zoology II—General.....	[1½]
Chemistry XVII—Industrial Chem- istry.....	[3]	Zoology VIIIb—Embryology.....	1 [2]
Chemistry XXI—Reports and Discus- sions.....	2	<i>C. Chemistry.</i>	
Chemistry XX—Assigned Work.....	3	Chemistry V—Advanced Organic... } alternating with	4
		Chemistry XII—Physical.....	[3]
		Chemistry XVII.....	
		Chemistry XXI—Reports and Discus- sions.....	2
		Chemistry XXII—Organic or Physi- cal Chemical Laboratory.....	[2]
		Chemistry XX—Assigned Work.....	2

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Course in Home Economics

The object of the home economics course is to fit young women for home making and to provide adequate training for teaching the various household arts. Nowhere is the application of modern science to everyday life more important than in the home. In no

other life-work do women find greater need of scientific knowledge and technical skill than in the intelligent and economic administration of household affairs.

The course includes instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene; and instruction in the care of infants and young children. During the entire course instruction is given in hand sewing, machine practice, and in drafting, cutting, and making garments. Attention is given to planning the wardrobe and remodeling garments. Altho the main work is scientific and technical, the importance of artistic and literary training for home life has not been neglected. It is recognized that all the knowledge of right living is needed to assist the student to a broader conception of citizenship as well as in performing the manifold duties of daily life.

Opportunities are greater and more varied today for women trained in home economics than for those trained in any other one line. Besides teaching, a profession which is chosen by many, there are excellent openings in institutional management, lunch-room and tea-room work which vary according to the type of institution selected. The demand for hospital dietitians is greater than can be met. There is also a growing demand on the part of the industries for trained women scientists. In view of this demand opportunity to take special courses in chemistry and bacteriology will be offered during the junior and senior years to approved students who wish to fit themselves for such work. Such preparation will qualify the student along the following lines: special research work on problems involving chemistry or bacteriology as applied to food analysis, federal and municipal inspection, analytical work in experiment stations and technical laboratories and chemistry as applied to textile analysis.

Regular students are expected to take the course as outlined below, with choice of electives; but when entered in other courses in the college they may elect certain work in the home economics department, under direction of the head of the department. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*	
English I—Rhetoric and Composition.	3	English I—Rhetoric and Composition.	3	
Chemistry I—General Chemistry	2 [1½]	Chemistry II—General Chemistry and Qualitative Analysis	3 [1½]	
Zoology X—General	2 [2]	Zoology X—Physiology and Anatomy	2 [2]	
Home Economics III—Hygiene	1	Art XII—Drawing and Design	[3]	
Home Economics I—Garment Making	1 [2½]	Home Economics I—Garment Making	1 [2½]	
Physical Training	[1]	Physical Training	[1]	
Options: A or B. Both subjects in one of the following groups must be chosen:				
A.				
Math. III—Algebra	2½	Music II—Harmony and Appreciation of Music	3.	
Math. II—Trigonometry	2½			
B.				
English VI—Literature and Composition	2	<i>Electives†</i>		
Music I—Elementary Harmony and History of Music	3			

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English II—Newspaper Work.	1	English III—Argumentation.	2
Modern Language.	3	English VIII—Interpretive Reading.	1
Chemistry IVb—Organic.	3 [1]	Modern Language.	3
History III—Modern European History.	3	Physics I—Descriptive.	5
Botany I—General.	[3]	Botany I—General.	1 [2]
Home Economics IV—Foods.	[3]	Home Economics IV—Foods.	[3]
Home Economics XVIII—Dressmaking.	[2]	Home Economics XXVII—Applied Household Mechanics.	1 [1]
Physical Training.	[1]	Physical Training.	[1]
<i>Elective.</i>		<i>Elective.</i>	
Music.	2	Music.	2.

Another elective may be substituted if the schedule permits.

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.	3	History I—Industrial History.	3
Psy. and Ed. IV—General Psychology.	3	Chemistry X—Food Analysis.	4
Home Economics VIII ₁ —Dietetics.	2 [1]	Chemistry XIX—Physiological.	
Home Economics IX—Sanitation.	2	Art VIII—Architectural Drawing and Interior Decoration.	[2]
Art XI—Costume Design.	[2]	Home Economics XVIII—Dressmaking.	[2]
Physical Training.	[1]	Home Economics VII—House Planning.	1 [1]
Elective.	6	Home Economics XII—Home Nursing and Care of Children.	2
Bacteriology I—General.	1 [2]	Physical Training.	[1]
<i>Electives.</i>		Elective.	4
Zoology VIIIA—Histology.	3	Bacteriology I—General.	1 [2]
		<i>Electives.</i>	
		Zoology VIIIB—Embryology.	3.

Other electives may be substituted for the above if the schedule permits.

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

† Electives in this term are to be taken only by those students having advance credit.

Senior Year

FIRST TERM	CREDITS*		SECOND TERM	CREDITS*
Economics I—Economics.....	5		English V—Shakespeare.....	3
English XI—American Poetry.....	2		Chemistry X—Food Analysis.....	
Art III—History of Art.....	3		alternating with	
Home Economics XXVI—Textiles and Clothing Economics.....	[2]		Chemistry XIX — Physiological Chemical.....	4
Home Economics XXI—Home Admin- istration.....	[3]		Psy. and Ed. I—History of Educa- tion.....	3
Physical Training.....	[1]		Home Economics VIII—Dietetics....	2 [1]
Elective.....	6		Home Economics XXV—Costume Design.....	[3]
<i>Electives.</i>			Physical Training.....	[1]
Bacteriology II—Advanced.....	1 [3]		Electives.....	[3]
Vocational Education V—Teaching Home Economics.....	1 [1]		<i>Electives.</i>	
			Bacteriology II—Advanced.....	[4]
			Vocational Education V—Teaching Home Economics.....	1[1]

Other electives may be substituted if the schedule permits.

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Education Courses

The requirement for entrance to the courses leading to the degree of Bachelor of Education is graduation from an approved Normal School which requires at least two years of professional and academic study and the entrance requirements of which are equal to those of this college.

By arrangement with Rhode Island Normal School, graduates of that institution will be enrolled in this course upon the recommendation of the principal of the Normal School. The course is of two years' duration and offers three optional lines of work, viz.: Agriculture, Home Economics and Science. The work is so arranged as to give in the shortest time possible training in the fundamental sciences, together with a comparatively large amount of professional work in the option chosen.

The Agricultural option offers an excellent opportunity to graduates of theological courses and teachers who are planning to take up work in rural communities to broaden their education in such a way as to enable them more completely to understand the problems of those with whom they intend to work.

The Science option gives a comprehensive foundation in Mathematics, Chemistry, Botany, Zoölogy, Physics and Bacteriology, and also gives an opportunity to specialize to some extent in one of these. Those who take this course will be prepared to teach science in the schools of the State.

The Home Economics option offers the fundamental subjects in household arts and the closely allied sciences which will prepare the student to teach these subjects in the schools of Rhode Island.

AGRICULTURE

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Mathematics III—Algebra.....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Mathematics II—Trigonometry.....	2½	Botany I—General.....	1 [2]
Chemistry I—General.....	2 [1]	Animal Husbandry I—Stock Judging.....	[2]
Botany I—General.....	1 [2]	Animal Husbandry III—Breeds.....	2
Botany III—Trees and Shrubs.....	[1]	Horticulture II—Vegetable Gardening.....	2
Agronomy II—Forage Crops.....	2	Horticulture IV—Spraying and Pruning.....	1 [1]
Animal Husbandry XIIa—Poultry.....	1	Botany III—Trees and Shrubs.....	[1]
Horticulture XVI—Landscape.....	1 [2]	Geology I.....	2
Physical Training.....	[1]	Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Chemistry IVa—Organic.....	3 [1]	Chemistry XIV—Agricultural Chemistry.....	3 [1]
Botany II—Crops and Weeds.....	1 [2]	Physics I—Descriptive Physics.....	5
Zoology X—General Zoology.....	2 [2]	Zoology X—Anatomy and Physiology.....	2 [2]
Animal Husbandry VI—Feeds and Feeding.....	3	Agronomy IV—Farm Crops.....	3 [1]
Agronomy III—Soils and Fertilizers.....	4 [1½]	Horticulture XVII—Small Fruits.....	2 [1]
Horticulture III—Fruit Culture.....	2	Physical Training.....	[1]
Physical Training.....	[1]		

SCIENCE

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Mathematics I—Algebra.....	2½	Mathematics VIIa—Analytics.....	4
Mathematics II—Trigonometry.....	2½	or	
Chemistry I—General.....	2 [1½]	Mathematics VIIb—Analysis.....	5
Botany I—General.....	1 [2]	Chemistry II—General Chemistry and Qualitative Analysis.....	[1½]
Zoology Xa—General Zoology.....	2 [2]	Botany I—General.....	1 [2]
Modern Language.....	3	Zoology Xb—Anatomy and Physiology.....	2 [2]
Art II.....	[1]	Geology I.....	2
Physical Training.....	[1]	Art II.....	[1]
		Modern Language.....	3
		Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Physics II—General.....	4	Physics II—General.....	4
Physics III—Laboratory.....	[1½]	Physics III—Laboratory.....	[1½]
Chemistry IVa—Organic.....	3 [1]	Zoology I—Invertebrate Morphology.....	1 [3]
or		Botany III—Trees and Shrubs.....	[1]
Chemistry III—Qualitative.....	[3]	Bacteriology I—General Applied.....	1 [2]
Botany III—Trees and Shrubs.....	[1]	Physical Training.....	[1]
Bacteriology I—General Systematic.....	1 [2]	Elective.....	6
Physical Training.....	[1]		
Elective.....	6		

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

HOME ECONOMICS

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Chemistry I—General.....	2 [1½]	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Zoology X—General.....	2 [2]	Zoology X—Physiology and Anatomy..	2 [2]
Botany I—General Botany.....	1 [2]	Art XII.....	[3]
Home Economics I—Garment Making..	1 [2½]	Home Economics I—Garment Making..	1 [2½]
Home Economics IV—Foods.....	[3]	Home Economics IV—Foods.....	[3]
Modern History.....	3	Home Economics XXVII—Applied Household Mechanics.....	1 [1]
Physical Training.....	[1]	Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I.....	3	Bacteriology I—General Applied.....	1 [2]
Vocational Ed. V—Home Economics Teaching.....	3	Home Economics VII—House planning.....	1 [1]
Home Economics VIII—Dietetics....	2 [1]	Home Economics XII—Nursing.....	2
Home Economics IX—Sanitation.....	2	Home Economics XVIII—Dressmaking.....	[2]
Home Economics XVIII—Dressmaking.....	[2]	Home Economics XXI—Home Administration.....	1 [3]
Chemistry IVa—Organic.....	3 [1]	Zoology VIIIb—Embryology.....	3
Bacteriology I—General Systematic..	1 [2]	Physical Training.....	[1]
Physical Training.....	[1]	Elective.....	3

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Teacher Training Courses in Vocational Education

A law passed by the sixty-fourth Congress and signed by the President, February 23, 1917, provides for coöperation between the Federal Government and the several States in the advancement of vocational education in the fields of agriculture, home economics, and trades and industries. In order to receive the benefits of this law, which is known as the Federal Vocational Education, it is necessary that the State shall, through the legislative authority thereof, accept the provisions of the Act and create or designate a State Board for Vocational Education, which shall have charge of the administration of this act. Under the supervision of the State Board, there shall be established vocational courses of less than collegiate grade for persons over fourteen years of age who have entered or are preparing to enter upon the line of vocational work in which they desire to receive instruction.

The Act also establishes a fund which shall be used for training of teachers, supervisors and directors of the vocational work. In order to carry out the provisions of the Act in so far as the training of

teachers in agriculture and home economics and teachers of related subjects in trades and industries is concerned, an agreement has been entered into between the State Board for Vocational Education and the Board of Managers of the Rhode Island State College, whereby teacher training courses for agriculture, home economics and related subjects in trades and industries shall be given at the college.

The courses as outlined are of four years' duration and upon completion, the graduates therefrom receive the Bachelor of Science degree. Requirements for entrance to these courses are the same as to the other four-year degree courses. (See pp. 34-41.)

According to a ruling of the Federal Board for Vocational Education, and the requirements of the State plan for training teachers, it will be necessary for all candidates for positions as teachers, supervisors or directors of vocational work to have had a certain amount of practical experience in the line of work in which a position is sought before such position can be obtained.

Agriculture

For the Freshman and Sophomore years the course is the same as the Agricultural Course, pp. 17-18.

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IX—Debating.....	1	History I—Industrial History.....	3
Animal Husbandry X—Veterinary Practice.....	3	Agronomy IV—Farm Crops.....	3 [1]
Animal Husbandry XII—Poultry Culture.....	1	Agronomy VII—Farm Management...	2
Agronomy III—Soils and Fertilizers... 4 [1½]		Psy. and Ed. III—Rhode Island Education.....	3
Horticulture III—Fruit Culture.....	2	Vocational Ed. I—History of Agri. Ed.	1
Horticulture XVI—Landscape Gardening.....	1 [2]	Animal Husbandry VII—Dairy Practice.....	1 [2]
Psy. and Ed. IV—General Psychology.....	3	Agronomy VI—Farm Machinery.....	2 [1]
Physical Training.....	[1]	Horticulture XVII—Small Fruits.....	2 [1]
		Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Psy. and Ed. I—History of Education.....	3
Psy. and Ed. II—Principles of Education.....	3	Agronomy X—Agricultural Experimentation.....	3
Animal Husbandry VI—Feeds and Feeding.....	3	Vocational Ed. III—Practice Teaching.....	3
Agronomy XII—Farm Accounts..... 1 [2]		Vocational Ed. IV—Special Methods in Agriculture.....	3
Vocational Ed. II—Practice Teaching.....	3	*Agriculture and Science elective.....	
†Agriculture and Science elective.....	5	Physical Training.....	[1]
Physical Training.....	[1]		

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

† The electives may be taken in any division of agriculture or in the botanical or zoological department.

Teacher Training Course in Home Economics

Freshman Year

Same as Home Economics Course, freshman year, page 27.

Sophomore Year

Same as Home Economics Course, sophomore year, page 28.

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
Psy. and Ed. IV—General Psychology..	3	Chemistry X—Food Analysis.....	4
Home Economics VIII—Dietetics....	2 [1]	alternating with	
Home Economics IX—Sanitation.....	2	Chemistry XIX—Physiological....	[2]
Art XI—Design.....	[2]	Art VIII.....	
Physical Training.....	[1]	Home Economics XVIII—Dressmak-	[2]
Electives.....	6	ing.....	
A.		Home Economics VII—House Plan-	1 [1]
Bacteriology I—General Systematic..	1 [2]	ning.....	
Zoology VIIa—Histology.....	3	Home Economics XII—Home Nursing	2
Other electives may be substituted if the		and Care of Children.....	
schedule permits.		Psy. and Ed. I—History of Education.	3
Bacteriology I must be elected in the Junior		Physical Training.....	[1]
year.		Elective.....	2
		Any second-term elective offered in the	
		Home Economics Course.	

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	English V—Shakespeare.....	3
English XI—American Poetry.....	2	Chemistry X—Food Analysis.....	4
Art III—History of Art.....	3	alternating with	
Home Economics XXVI—Textiles and		Chemistry XIX—Physiological....	3
Clothing Economics.....	[2]	Psy. and Ed. III—Secondary Educa-	
Home Economics XXI—Home Ad-		tion.....	1 [1]
ministration.....	[3]	Vocational Education V—Teaching	
Psy. and Ed. II—Principles of Educa-		Home Economics.....	2 [1]
tion.....	3	Home Economics VIII ₂ —Dietetics....	
Vocational Education V—Teaching		Home Economics XXV—Costume	[3]
Home Economics.....	1 [1]	Design.....	
Physical Training.....	[1]	Physical Training.....	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

II. SHORT COURSE IN AGRICULTURE

To meet the needs of those who find it out of their power to undertake a four years' college course, but who, nevertheless, desire to increase their efficiency on the farm, the college offers what is known as a short course in agriculture. Students may with advantage take only a part of the course if unable to remain for the whole time.

It is required of applicants for this course that they be at least eighteen years of age at entrance, that they shall have completed at least the common school, that they shall have a definite purpose in mind in applying for the course, and *that within three weeks after entrance they shall satisfy their teachers that they are sufficiently mature,*

sufficiently earnest, and sufficiently capable to warrant their remaining for the course. Every effort will be made to guard this course from becoming a refuge for the idle, the purposeless, and therefore the unsuccessful, and to that end drastic measures of elimination will be used whenever necessary, but especially at the end of the first three weeks of the year.

The course is in no case supposed to serve as a substitute for the regular work of the college either in character or in scope of the subject-matter presented, and does not lead, directly or indirectly, to a degree, a certificate only being granted. Neither is it to be considered as preparatory to the college work. Its particular function is to give, in the shortest, most direct way possible, certain definite, specific, and perhaps uncorrelated information which will be of immediate value on the farm.

In order that seriousness of purpose as regards an agricultural occupation may be assured from those taking the agricultural short course, no student will be permitted to register for the second year's work who has not had at least six months' practical experience on a farm. This experience should be obtained upon a farm making a specialty of the line of work which the student intends to follow.

Requirements for Admission to the Degree Courses

UNITS

The requirements for admission are reckoned in units. A "unit" represents the successful completion of a year's study of a subject, to which have been devoted not less than one hundred and twenty recitation periods of sixty minutes each, or their equivalent (*e. g.*, one hundred and eighty periods of forty minutes each). Fourteen units are required. A student may obtain this amount of entrance credit from high-school work or from examination.

GROUPS

The entrance subjects are divided into two groups, A and B. Those in A, unless otherwise indicated, are required of all candidates for admission. Candidates who have not studied algebra the past year are urged to review the subject during the summer before entering college. Observance of this warning will prevent many failures in college work.

GROUP A

The school year is reckoned at thirty-six weeks, the minimum length.

English.....	108 weeks.....	3 units.
Modern Language—other than English.....	72 weeks.....	2 units.
Algebra—for engineering and applied science students, 54 weeks.....		1½ units.
Algebra—for agricultural and home economics students, 36 weeks.....		1 unit.
Geometry, Plane.....	36 weeks.....	1 unit.
Geometry, Solid—for engineering students only, 18 weeks.....		½ unit.
Physics.....	36 weeks.....	1 unit.
History.....	36 weeks.....	1 unit.

The remainder of the fourteen units must be taken from

GROUP B *

No subject is accepted for more than the amount here stated or for less than one-half of a unit.

Foreign Language.....	216 weeks.....	6 units.
Geometry, Solid—for other than engineering students, 18 weeks.....		½ unit.
Botany.....	36 weeks.....	1 unit.
Algebra—for students in agriculture and home economics, 18 weeks...		½ unit.
Chemistry.....	36 weeks.....	1 unit.
Geology.....	18 weeks.....	½ unit.
Physiography.....	36 weeks.....	1 unit.
Physiology.....	18 weeks.....	½ unit.
History.....	108 weeks.....	3 units.
Drawing.....	36 weeks.....	1 unit.
Domestic Science.....	18 weeks.....	½ unit.
Shop Practice.....	18 weeks.....	½ unit.
Farm Practice.....	18 weeks.....	½ unit.

REGISTRATION

Registration occurs on the first day of each term, from 9 A. M. to 12 M., and from 1 P. M. to 4 P. M. A special fee of one dollar per day will be charged for registration after the first day of each term.

A fee of one dollar per day is charged for absence immediately preceding or following a holiday or other vacation.

Each student is required to sign the following form of application before registering for the current year:

I hereby make application for registration as a student in Rhode Island State College for the year. In consideration of such regis-

* Other subjects not here named will receive due consideration if presented on the application blank, with a statement of the work done.

tration and the attendance consequent thereupon, I hereby engage and obligate myself cheerfully to observe and conform to the rules of said college, having specifically in mind, without excluding others, that in relation to hazing and class disturbances. I further engage promptly and on my own motion to withdraw from the college whenever I find myself unable or unwilling to carry out the obligation herein assumed.

METHODS OF ADMISSION

On any or all of the subjects named in both groups, satisfactory standings from any reputable high school will be accepted in lieu of examination, on presentation of a copy of the student's full record in the high school showing clearly the nature of the work pursued in each subject, time devoted to it, and grade of work done. This copy must be duly signed by the proper official of the school, and must be accompanied by a certificate of good moral character. The latter, however, may be from any reputable source. On application, blanks showing definitely the full nature of the information desired from the high school will be furnished.

Candidates not presenting satisfactory standings from reputable high schools will be examined, over ground corresponding to the number of units attached, on all the subjects of Group A and on such of Group B as they may offer. Examinations for entrance will be held at the opening of the college year in September, as announced in the calendar, page 8.

SPECIFICATIONS OF GROUND TO BE COVERED*

GROUP A

These subjects, with the exception stated, are required of all students to the extent indicated by the number of units designated in each case.

Languages

ENGLISH, 3 UNITS.—In English two aims are sought: first, a knowledge of the language—including the acquisition of an ample vocabulary and power of effective expression—second, some acquaintance with the literature. To attain the

* For any or all of the subjects described below the requirements of the College Entrance Examination Board, upon which these specifications are largely based, will be accepted. A circular stating these requirements in detail and blank forms of application for examination may be obtained by sending ten cents in stamps to the College Entrance Examination Board, Post Office Sub-Station 84, New York City.

first, grammar and composition must be thoroly studied. Thruout the secondary-school course there should be much practice in writing along a variety of lines suggested by the pupil's experience, his general interests, and studies other than English. Spelling, punctuation, accuracy of idiom, should receive due attention in all written work; while correct and forceful oral expression should also be insisted upon.

To meet the requirement in literature certain selections are to be made from two lists of works—one for reading, the other for closer study. It is hoped to foster in this way a taste for good books and an intelligent appreciation of them. Committing to memory selected passages and reading aloud are strongly urged. In all cases some knowledge of the author's life and his place in literature should be acquired, while a more exacting study of selected texts would lay emphasis on form and style, meaning of particular words and phrases, and the significance of allusions. The list of books prescribed for 1920-21 may be obtained from the nearest high-school principal.

ELEMENTARY GERMAN, 2 UNITS.—During the first year the work should consist of drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. During the second year the course should be a continuation of the first as regards grammar, composition, and conversation. The reading should consist of at least 200 pages of such texts as Arnold's *Fritz auf Ferien*, Wildenbruch's *Das Edle Blut*, Mosher's *Willkommen in Deutschland* and Benedix' *Der Prozess*.

ELEMENTARY FRENCH, 2 UNITS.—The course in French should parallel that in German. During the first year there should be drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. Thruout the second year the course should be a continuation of the first as regards grammar, composition, and conversation. At least 250 pages of such texts as Bruno's *Le Tour de la France*, Malot's *Sans Famille*, Mérimée's *Colomba*, Sarcy's *Le Siège de Paris*, and Hugo's *La Chute* should be read.

ELEMENTARY SPANISH, 2 UNITS.—The course in Spanish should parallel those of German and of French in regard to the nature, amount, and quality of the work accomplished in both years. The reading in the second year should consist of at least three hundred pages from such texts as Carrion y Vita's *Aza—Zaragüeta*; Gutierrez—*El Trovador*; Taboada—*Cuentos Alegres*; Alarcón—*El Capitán Veneno*; Galdós—*Electra*; Valdés—*La Hermana San Sulpicio*.

Mathematics

ALGEBRA, 1½ UNITS.—The requirement in algebra comprises the four fundamental operations; factoring; highest common factor and lowest common multiple; fractions; linear equations; exponents; radicals; quadratic equations; simultaneous equations involving quadratics; binomial theorem for positive integral exponents. Problems should be given at frequent intervals. Candidates for the courses in Agriculture and Home Economics are required to offer but one unit for this work.

PLANE GEOMETRY, 1 UNIT.—This requirement is met by the usual theorems and constructions of standard text-books, numerous originals, and applications.

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—The ground is covered by the usual theorems and constructions of standard text-books, originals, and applications.

Science

PHYSICS, 1 UNIT.—This course should consist of class-room work based on a standard text-book, accompanied by lecture-table demonstrations and by numerous practical problems. A parallel course in individual laboratory work is desirable, but is not absolutely required. In the case of laboratory work, one hour of credit will be allowed for each two hours spent in the laboratory.

History

HISTORY, 1 UNIT.—The requirement in history will be met by presenting any one of the following subjects: ancient history, especially Greek and Roman, with the chief events of the early Middle Ages to the death of Charlemagne (814); medieval and modern European history from 814 to the present time; English history; American history and civil government.

GROUP B

From this group units are to be taken, in addition to those of Group A, sufficient to make up the whole number required. Any combination of units, including fractions not less than one-half, will be allowed.

Languages

GERMAN, 2 UNITS.—The requirement for Elementary German is indicated under Group A. One unit will also be allowed for third and one for fourth year work. Third-year study should emphasize reading and advanced composition. Suitable texts are Riehl's *Der Fluch der Schönheit*, Freytag's *Bilder aus der deutschen Vergangenheit*, Lessing's *Minna von Barnhelm*, Schiller's *Wilhelm Tell*, and Heine's *Die Harzreise*. The fourth year's work should mark a decided advance in the mastery of vocabulary and idioms shown both in speaking and writing. The works may be made the basis for themes. The following reading matter is suggested: Freytag's *Soll und Haben*, Fulda's *Der Talisman*, Hauff's *Lichtenstein*, Scheffel's *Ekkehard*, Schiller's *Wallenstein*, *Maria Stuart*, or *Geschichte des dreissigjährigen Krieges* (Book III), Dahn's *Ein Kampf um Rom*, Goethe's *Dichtung und Wahrheit* (Books I-IV). At least 500 pages should be read.

FRENCH, 2 UNITS.—The requirement for Elementary French is indicated under Group A. One unit will also be allowed for third and one for fourth year work. In third year emphasis should be laid on reading. Some time ought also to be given to advanced composition. Among suitable texts may be mentioned Racine's *Athalie*, Corneille's *Le Cid*, Molière's *Le Bourgeois Gentilhomme*, Sandeau's *Mademoiselle de la Seiglière*, Vigny's *La Canne de Jonc*. From the fourth year's study increased facility in conversation and composition should be gained, and any modern French, other than technical, should be read with ease. Such texts as the following are recommended: the prose works of Dumas père, Hugo's

Ruy Blas, *La Fontaine's Fables*, *Saint Beuve's Essays*, *Taine's Origines de la France Contemporaine*, *Pellissier's Mouvement Littéraire au XIX^e Siècle*. From 600 to 1,000 pages should be read.

SPANISH, 2 UNITS.—The requirement for Elementary Spanish is indicated under Group A. One unit will also be allowed for third and one for fourth year work. Third year study should emphasize reading, advanced composition, free reproduction, both orally and in writing, of the texts read. The reading should consist of at least four hundred and fifty pages from such texts as Valdés's *La Alegría del Capitán Ribot*; Alarcón's *El Niño de la Bola*; Valera's *El Comendador Mendoza*; Bretón de los Herreros's *¿Quién es Ella?*; Becquer's *Legends and Tales*; Sanz's *Don Francisco de Quevedo*; Caballero's *El Servilón y un Liberalito*; Gil y Zarate's *Guzmán el Bueno*.

The fourth year's work should show an increased facility in reading, composition and conversation. The reading should consist of from six hundred to one thousand pages of such texts as *Blasco-Ibañez's la Barraca*; Nuñez de Arce's *El Haz de Leña*; Tamayo y Baus's *Un Drama Nuevo*; Ayala's *Consuelo*; Avelleda's *Baltasar*; Echegaray's *El Gran Galeoto*; Pereda's *Pedro Sánchez*; Valera's *Pepita Jiménez*; Pardo Bazan's *Pascual López*.

LATIN, 1 TO 4 UNITS.—A credit of one unit will be given for each year's work in Latin, covering in all a standard beginner's book, four books of Cæsar's Gallic War, six orations of Cicero and six books of Virgil's *Æneid*. It is expected that work in prose composition and sight reading will be included in each subject.

Mathematics

SOLID GEOMETRY, ½ UNIT.—See Group A for other than engineering students.

Science

BOTANY, 1 UNIT.—The preparation in Botany should include individual laboratory work recorded by notes and diagrammatic drawings. Field work is desirable, and should also be accompanied by notes. The year's course of study should consist of three parts, viz.: 1. The general principles of the anatomy, morphology, physiology, and ecology of seed plants. 2. The natural history of the plant groups. The structure, reproduction, and adaptations to habitat of one or two types from each group should be studied. 3. Classification. A brief study of the subdivisions of the above groups. Ability to determine species of flowering plants is not essential. Any standard text-book covering the above field may be used.

CHEMISTRY, 1 UNIT.—An elementary text-book, such as William's *Elements of Chemistry*, or *First Principles of Chemistry*, by Brownlee and others, should be covered by recitations. At least one exercise per week must be devoted to individual work in the laboratory. The pupil must perform forty or more experiments, such as are described in the Report of the College Entrance Examination Board, 1919, and keep a notebook in which he describes the apparatus used, records the phenomena observed, and states the conclusions in his own words, in each experiment.

GEOLOGY, $\frac{1}{2}$ UNIT.—In Geology, a study of the following subjects should be made: rock-forming minerals, their names and chemical constituents; earthquakes—their cause and effects; volcanoes—distribution, types, character of eruption, nature of erupted material; supposed physical state of the earth's interior; surface agencies destructive to rocks, with brief illustrations; processes of re-construction, with illustrations; rocks—classification, according to origin, rock fracture and dislocation, rock structure due to erosion, matamorphic rocks, mineral veins and their method of formation; conditions determining land sculpture; the geological periods, with land elevations, and the characteristics of climate, plant and animal life of each period.

PHYSIOGRAPHY, 1 UNIT.—This course should include a consideration of the earth as a globe, the atmosphere, the waters of the earth, the lands, life upon the earth, and the reactions between these elements. Special attention should be given to the questions of climate, the winds, the weather, tides, ocean currents, and to the effect of the ocean in modifying climatic conditions. Attention should be directed to the manner in which the land was originally formed and to the way in which the original formation has been and is being modified by the action of erosion, the winds, and frost. Thruout the course consideration should be given to the manner in which the various physical characteristics of the earth have affected life upon its surface.

PHYSIOLOGY, $\frac{1}{2}$ UNIT.—The text-book work should cover material equivalent to that of Martin's Human Body or Hough and Sedgwick's Human Mechanism. In addition the applicant should present a notebook, showing laboratory work on the elementary physiological processes and general structure of mammals.

ZOOLOGY, 1 UNIT.—The work should include: 1. The general natural history of a number of common vertebrates and invertebrates of the locality where the work is given. 2. The classification of these forms into phylum, class and order, with the characteristics of the several groups. 3. The main anatomical features of one vertebrate, two arthropods (one an insect); an annelid, preferably the earthworm, a coelenterate, two protozoans (*Amœba* and *Paramœcium* recommended). 4. The general physiology of the above types involving digestion, absorption, circulation, excretion, and nerve function. These should be compared with the same functions in the human body. 5. The following subjects should be brought before the student in connection with the foregoing studies: asexual and sexual reproduction, alternation of generations, regeneration, fertilization and segmentation of egg cells, adapation, variations, evidences of relationship between similar groups, and the cell structure of animals.

Certified notebooks must be presented, which include notes upon work and discussion in class-room and drawings of the forms dissected.

History, 1 unit

See Group A.

Drawing

DRAWING, 1 UNIT.—This may be either freehand or mechanical. If freehand drawing is offered, the candidate should submit at least fifteen drawings, the majority to be in pencil, certified as his work by the instructor. These should show

ability to sketch from various objects with considerable accuracy of proportion and clearness of line, and a fair understanding of the rules of perspective and light and shade as applied in freehand sketching. A candidate may also present the equivalent of five hours per week for one year in elementary mechanical drawing, lettering, or sketching from models.

Domestic Science

DOMESTIC SCIENCE, 1 UNIT.—In domestic science the student must present satisfactory evidence of knowledge in the following subjects: the use and care of the kitchen equipment, general cleaning processes, the marketable forms of staple foods. She must also show credit for at least twelve cooking laboratory lessons of two hours each.

Shop Practice

SHOP PRACTICE $\frac{1}{2}$ UNIT.—The candidate may offer carpentry or any of the various forms of bench-work given in a well-equipped manual training school, equivalent to five hours per week for one-half year.

Farm Practice

FARM PRACTICE, $\frac{1}{2}$ UNIT.—By "farm practice" is meant familiarity with the operations of the farm, such as the harnessing of teams, the use of tillage implements, and the care of dairy animals.

Degrees

The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 17–33. The degree of Bachelor of Education is conferred upon a student who has completed one of the educational courses outlined on pages 29–30. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satisfactory thesis in applied or economic science, and upon passing examinations in the subjects pursued. Candidates not graduates of this college must file with the committee on graduate study, not later than October first, a detailed statement of their previous work, certified by the proper authorities. They must select, not later than November fifteenth, a major and a minor subject which must be closely related and have the approval of the committee on graduate study and of the professor in whose department the principal work is done. Major subjects may be selected in any of the following departments: agriculture; botany; chemistry; zoölogy; bacteriology; home economics; electrical, mechanical and civil engineering. The minor may be selected from

undergraduate subjects outlined in the catalog; the major, however, must be advanced work specially arranged with the individual professor. The thesis must be typewritten, upon paper of the size and quality prescribed, and two copies must be in the hands of the president not later than June first.

The requirements for the degree of Mechanical Engineer, Electrical Engineer, or Civil Engineer, consist of three years of successful professional practice, subsequent to the Bachelor's degree, one of which must have been in a responsible position; the presentation of an acceptable thesis; and the passing of examinations upon the investigations involved in the thesis. The requisites for the degree of Master of Agriculture are the same as for the engineering degrees, except that five years of professional practice are required.

A fee of five dollars is charged for registration for an advance degree. Students from outside the state pay a tuition fee of fifty dollars during the year of residence. The cost of a diploma is five dollars.

Teachers' Certificates

The following resolution adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island College will be received as evidence of the required qualifications in scholastic subjects for a teacher's certificate of the first grade."

Rhode Island State College also offers professional courses in all subjects required by the State Board of Education for a first grade teacher's certificate, and graduates of the college who have completed all the subjects in Psychology and Education will be accredited in full for a teacher's certificate of the highest rank. By arrangement with the State Board for Vocational Education courses at Rhode Island State College are planned to prepare students to meet the requirements set up for teachers of agriculture, home economics, and related subjects in trade and industry.

By action of the Regents of the State of New York, taken June 9, 1910, the degrees of B. S. and M. S. from this college are accepted as a basis for the issuance of licenses to teach in that state.

Reserve Officers' Training Corps

There is an increasing demand thruout the country for teachers of high-school grade who are able to give military instruction, so that students of Applied Science who can take the military training prescribed for the Officers' Reserve Corps will be adding an important asset to their professional equipment.

Expenses

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is \$25.00 a term, or \$50.00 a year. Students who apply for admission as non-residents will be expected to pay tuition thruout their course unless there is a bona-fide change of residence of the parent or guardian.

The regular college expenses are tabulated as follows:

Board, \$5.50 per week (subject to change without notice)	\$198 00
Room-rent, including heat and light	40 00
Incidental fee, \$5.00 per term	10 00
Student tax for Beacon, outside lectures, athletics, etc.	10 00
Laboratory expense, \$5.00 per term, estimated	10 00
	<hr/>
	\$268 00

The first four items must be paid quarterly in advance; that is to say, from boarding students, \$60.00 will be required at the opening of the year, September 20, 1920, and on November 22, 1920; also at the opening of the second term in February, and again at the beginning of the fourth quarter. Non-residents of the state should add to this sum \$12.50 for tuition each quarter. Day students will be required to make a deposit of \$5.00 for laboratory expense together with the incidental fee and student tax, making a quarterly payment of \$10.00 in advance on the above dates. In order to secure dormitory accommodations, the student is required to deposit \$10.00 with the application, the amount to be credited on the room rent for the first quarter. If the student fails to take the room, the deposit is forfeited. During vacations dormitories and fraternity houses will not be open for occupancy except under special arrangements with the college office. In such case, a higher rate for room rent will be charged, such rate to be adjusted on individual application. The item of laboratory expense includes all material used in the various

laboratories, and the destruction, breakage, or marring of apparatus and tools, and must be paid when bill is presented at the close of each term.

The probable cost of books will be from \$30.00 to \$50.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from \$10.00 to \$25.00. A fee of 50 cents will be charged for each second examination to make up a condition. Graduates pay the cost of diplomas, \$5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter.

TRANSPORTATION.—The college conveys day-students to and from the railroad station free of charge. Once at the beginning and end of each term, trunks will be conveyed to and from the station for students living in dormitories under college control.

BOARDING STUDENTS.—The deposit for board for 1920-21 is at present fixed at \$5.50 per week. At the end of each term, the student will be charged, pro rata, the cost of board in excess of deposit or, if the cost falls below deposit, a rebate will be allowed. Owing to the uncertainty of prices for all forms of provisions and labor, the right is reserved to make change in the rate of board at such times as may appear necessary to do so. It is, however, guaranteed that board will be furnished students at cost. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the use of such ticket. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance.

CASES OF ILLNESS.—Arrangements for ascertaining and handling cases of illness are as follows: Each floor of the dormitory and each house has a student officer, called a monitor, appointed and paid by the college. A part of his duties is to report cases of illness. The room-mate also reports such illness to the student head-waiter in the dining room, who sends the meal to the room and reports his action to the registrar. This official notifies the office, where such action is taken in consultation with the college physician as seems advisable. A small hospital room is maintained, to which a patient

may be moved, and in which he may have entire quiet and such care and attention as may be required.

MEDICAL SERVICE.—Because of the necessity for systematic medical supervision of the students, a college physician has been appointed. An effort has been made to model the service after that of the most progressive universities, with certain modifications to fit local needs. Here at Kingston, the work comes at present under three heads: 1. The care of the sick. 2. A systematic examination of students with a view to giving any needed advice, and the keeping of permanent records of their condition. 3. The making of examinations for different branches of the Government service.

DORMITORIES FOR MEN.—East Hall affords excellent accommodations for men students. The two upper floors are entirely devoted to rooms for students. The sanitary conveniences on each floor are ample, including a full complement of shower baths. The first floor contains a social room for the men, two dining-rooms with capacity for one hundred and fifty students each, and a kitchen with good equipment.

Some of the college fraternities have erected buildings of their own, while others occupy houses rented by the college in the village of Kingston nearby.

DORMITORIES FOR WOMEN.—The college maintains two dormitories for women, Davis Hall and South Hall, accommodating about fifty students. Each dormitory is supervised by a faculty member and every possible care is taken to guard the health and safety of the young women. Much attention is given to the social life among them. The dining-room for the women is in South Hall.

FURNITURE.—The rooms in the women's dormitory are provided with necessary furniture, including mattresses, but no other bedding material. *All students in the men's dormitories are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from \$8.00 to \$10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold when the student leaves, for one-half to three-fourths the original price. All students should bring with them such articles as sheets, blankets, pillow, pillow-slips (all for single bed), and towels. Men students are required to purchase mattresses at the college.

ROOMS IN THE VILLAGE.—Furnished rooms in private houses for students who occupy them thruout the college year range from \$1.25 to \$2.50 per week. Arrangements for such rooms should be made by the individual, who may procure lists of available rooms at the college office.

COLLEGE STORE.—Students will be required to pay cash at the store for all books and other supplies.

DAMAGE FUND.—All damage not due to ordinary wear will be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.
2. Students found guilty of such damage, but not acknowledging and settling for the damage will be charged double the cost of repair.
3. Students will be responsible for damage in their own rooms. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Religious Influences

This college is a state institution, and consequently, the widest latitude is given to all creeds and forms of religious belief. Simple assembly exercises are held on one day of each week and are conducted by the president or some other member of the faculty. It is required that students attend assembly.

A branch of the Intercollegiate Young Men's Christian Association is doing active work among the men students, holding a meeting weekly thruout the year. This association conducts courses in Bible study, and is taking the lead in endeavoring to establish sound and high ideals of college life.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and if possible to join its membership. Churches of various denominations in Wakefield, four miles distant, welcome our students. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

The College Lecture Association

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to introduce talented speakers upon subjects both entertaining and instructive. The association may be looked upon as a permanent and important factor in college activities.

Equipment

FARM AND CAMPUS.—The landed property of the college has a total area of 170 acres. About forty-one acres of this area are devoted to buildings, lawns, and athletic grounds; nine acres are in forest; and six are being developed as an arboretum. Thirty-five acres are used for the field investigations of the experiment station, which are valuable object lessons in agricultural instruction. The remainder is used for garden and orchard, and for raising crops for the live stock. The total value of land, buildings, and equipment is over \$500,000.

AGRICULTURAL BUILDINGS.—The agricultural buildings consist of a commodious dairy barn with laboratories for instruction in farm dairying and milk testing; a horse barn of modern construction; a greenhouse with an area of 10,000 square feet; a building attached to the greenhouse for class work in agronomy and horticulture, and a group of buildings used for instruction and experimentation in poultry raising.

ENGINEERING BUILDINGS.—The engineering department is equipped with modern machine, forge, and pattern-making shops, located in a building known as Ladd Laboratory. In Lippitt Hall, a granite building, 134 by 40 feet, are housed the lecture rooms, drawing rooms, testing rooms, and engineering laboratories of the department. A boiler house and a dynamo room, from which heat, power, and light are furnished for the various buildings, are a part of the engineering outfit for practical instruction and for experimentation in electrical and steam engineering.

SCIENCE HALL.—This building was first occupied in October, 1913. It consists of three stories and a basement, measures 154 by 60 feet, and is built of native granite. Here are housed the departments of chemistry, physics, zoölogy, bacteriology, and botany. Each department is provided with commodious laboratories, recita-

tion room, and department library room. An amphitheatre having a seating capacity of 150 and provided with suitable projection apparatus, serves for the common use of the various departments requiring such a room.

HOME ECONOMICS LABORATORIES.—The special laboratories of this department are located in Davis Hall and in a small building near it.

TAFT LABORATORY.—The laboratories and offices of the experiment station are housed in a granite building known as Taft Laboratory.

DRILL HALL AND ATHLETIC HOUSE.—The drill hall, a room 134 by 40 feet, located in Lippitt Hall, is used both as an armory and as a gymnasium. A dressing room and bath room are attached to the hall. An athletic house provided with bath and dressing rooms for out-of-door sports is located at the athletic field, which is equipped with cinder track and straightaway for track athletics. Tennis courts for both men and women are also provided.

The Library

The library occupies two large adjoining rooms in Lippitt Hall and numbers over seventeen thousand volumes. The books are arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a card catalog gives author, title, and subject entries. As the library has been from the first intended for reference work, the various departments of instruction have made their selections with the greatest care. In the reading-room, one hundred and twenty of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

Since the library has been a government depository twenty-five hundred books and pamphlets have been received, which are of value in scientific investigation and research.

The library is open every week day from 8:00 A. M. to 6:00 P. M., with the exception of an hour at noon. The librarian or his representative is in constant attendance, to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the State are at liberty to use the library.

Location

The college campus is one and one-half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. The ride from Providence is about forty to forty-five minutes in length. From New York the time is some four hours.

Telephone Calls

The college office cannot undertake to call students to the telephone. Messages will be taken to be delivered to students as soon as practicable. Men students boarding at the college may be reached over the pay-station telephone at East Hall, Narragansett Pier 20259-J at 7:00 to 7:30 A. M., 12:00 to 12:30 P. M., and 6:00 to 6:30 P. M. Women students may be reached over the pay-station telephone at Davis Hall 20259-W, at 7:30-8:00 A. M., 12:30-1:00 P. M., and 6:30-7:30 P. M.

DEPARTMENTS OF INSTRUCTION

The following subjects are offered in the different departments. All subjects in the departments of instruction preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture

PROFESSOR ADAMS, PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK,
ASSISTANT PROFESSOR RIMOLDI, MR. BRETT, MR. MERRILL

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work outlined above, all students registered for a degree in agriculture will be required to show certain familiarity with the ordinary operations of the farm, before such degree is given.

In order that those students who have not had an opportunity to receive training in the practical work of the farm may become familiar with some of the more common operations, they will be required, during their connection with the college, to do a certain amount of routine farm work without pay. This will include work in the dairy barn, poultry yard, greenhouses and gardens. This training will be in addition to the laboratory credits prescribed in the regular course. The amount of such work required will depend upon the efficiency shown by the student. No college credits will be given for this work, yet the neglect of this phase of the training may be considered a sufficient cause for dismissal from the institution. Students taking practical work upon farms during the summer vacations will be required to furnish a certificate from their

employers, stating the time spent on the farm and the kind and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is to elect during the Senior year.

AGRONOMY

PROFESSOR ADAMS, ASSISTANT PROFESSOR BURDICK

The instruction in agronomy begins the first term of the Junior year, when a study is made of the soil. Following this work are subjects dealing with the field crops and their uses as food for man and beast. In the work with soils and fertilizers, especial emphasis is placed upon the problems connected with the proper use of chemical manures.

The business side of farm life is given attention in the subject treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment station, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery.

Students have the advantage of the field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects

II. Forage Crops.—History and development of the plants used for forage silage, methods of construction of silos. *Two recitation credits, first term. Elective for Seniors in Agriculture and in Education Course, Agricultural option.*

III. Soils and Fertilizers.—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Four recitation and one and one-half laboratory credits, first term. Required of Juniors in Agriculture and in Education Course, Agricultural option; option for Juniors in Applied Science. Prerequisite: Chemistry I and II.*

IV. Farm Crops.—Origin and history; production and place in the rotation of clovers, grasses, and root crops. *Three recitation credits and one laboratory credit, second term. Required of Juniors in Agriculture and in Teacher-Training Course in Agriculture; and of second-year students in Education Course, Agricultural option. Option for Juniors in Applied Science. Prerequisite: Botany I and II.*

VI. Farm Machinery.—Development of farm machinery, methods of construction, function, and operation. *Two recitation credits and one laboratory credit, second term. Required of Juniors in Teacher-Training Course in Agriculture, second term. Option for Juniors in Agriculture.*

VII. Farm Management.—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming accounts. *Two recitation credits, second term. Required of Juniors in Agriculture, and in Teacher-Training Course in Agriculture. Prerequisite: Agronomy III and IV.*

VIII. Farm Management (Advanced).—Individual problems of farm management are assigned. Field trips are made for studying different types of farming. Problems in planning cropping systems and other management work. There will be at least two one-day field trips. *One recitation and two laboratory credits, second term. Elective for Seniors in Agriculture.*

IX. Literature.—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports on special topics. *Two recitation credits, second term. Elective for Seniors in Agriculture.*

X. Agricultural Experimentation.—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits, second term. Required of Seniors in Agriculture, and in Teacher-Training Course in Agriculture.*

XI. Plant Breeding.—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Three recitation credits, first term. Required of Seniors in Agriculture; option for Seniors in Applied Science. Prerequisite: Botany I and II.*

XII. Farm Accounting.—Aims and objects of farm accounts, farm inventories, single enterprise accounts, complete set of farm accounts and special records. Emphasis will be placed upon the interpretation of results as applied to the organization of a farm. *One recitation and two laboratory credits, first term. Elective for Seniors in Agriculture. Required of Seniors in Teacher-Training Course in Agriculture.*

XIII. Marketing of Farm Products.—Kinds of markets, methods of sale, marketing costs, prices, standardization of farm products, organization of co-operative markets. *One recitation and two laboratory credits, second term. Required of Seniors in Agriculture.*

A. Soils and Fertilizers.—An elementary course on the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Three recitation credits. Required of Short-Course students in Agriculture, first year.*

B. Crops and Rotations.—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various-types of farms. *Three recitation credits. Required of Short-Course students in Agriculture, second year.*

C. Farm Management.—An elementary course on the principles of farm management, equipment, cost of production. *Two recitation credits, first term. Required of Short-Course students in Agriculture, second year.*

D. Farm Machinery.—Care and repair of farm implements. *One recitation and three laboratory credits, second term. Required of Short-Course students in Agriculture, second year.*

ANIMAL HUSBANDRY

PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK, MR. BRETT

The subjects in animal husbandry are so arranged as to furnish practical as well as theoretical instruction in the selection, care, and management of live stock on the farm. All students who graduate in agriculture are required to study breeds of stock, stock-judging, and veterinary practice. The student is taught how to select and care for farm animals. Students specializing in animal husbandry are offered advanced stock-judging, the principles of feeding, breeding, and the management of herds, flocks, and studs. Work in dairying is offered during the second term of the Junior year, and one who cares to specialize will find an elective thruout the Senior year.

Instruction in poultry culture is given during the Senior year, and is both practical and theoretical. During the same year an elective is offered in advanced poultry judging and poultry investigation. The equipment in poultry is particularly strong. The college poultry plant enables the student to obtain a large amount of practical experience in incubation, brooding, feeding, and general management. In addition to the poultry stock in the college yards, students have the opportunity of following the investigations which are being conducted by the experiment station. An eight weeks' course in poultry keeping is offered also during the winter months, full information concerning which may be obtained by addressing the President of the college.

Subjects

I. Stock Judging.—Scoring and comparison of various types of horses, cattle, sheep and swine, from the standpoint of the market and the producer. *Two laboratory credits, second term. Required of Freshmen in Agriculture, and of first-year students in Education Course, Agricultural option. Professor Ladd.*

II. Advanced Stock Judging.—A continuation of the work given in Animal Husbandry I in the judging of the various classes of farm animals. Tracing of pedigrees. Students chosen to represent the college in the annual stock-judging contest will be credited with this subject. *Two laboratory credits, second term. Elective for Juniors or Seniors in Agriculture.* Professor Ladd.

III. Breeds.—History and characteristics of the principal types and breeds of farm animals. A study of conditions to which each is adapted. *Two recitation credits, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option.* Professor Ladd.

IV. Principles of Breeding.—A study of the science and art of breeding. Discussion of the laws of heredity as applied to improvement of animal types. Special attention is given to recent experimental work in breeding. *Three recitation credits, second term. Required of Seniors in Animal Husbandry; option for Seniors in Applied Science; elective for others. Prerequisite: Zoölogy III.* Professor Ladd.

V. Animal Husbandry. Management of Dairy Cattle. This subject covers the field of milk production. It includes the building up of the dairy herd; care and management of the dairy calf; cost of growing dairy heifers; selection and care of the dairy sire; cow testing associations, bull associations and calf clubs; advanced registry work; construction of dairy barns and silos; production of certified and high grade milk; cost of milk production. *Two recitation credits, first term. Elective for Seniors in Agriculture.* Professor Ladd.

VI. Feeds and Feeding.—Composition and digestibility of feeds, principles of animal nutrition. Various methods of feeding farm animals. Balanced rations. Feeding standards. Compounding and figuring the cost of rations for different types and classes of animals. *Three recitation credits, first term. Required of Seniors in Agriculture, in Teacher-Training Course in Agriculture, and of second-year students in Education Course, Agricultural option; option for Seniors in Applied Science. Prerequisite: Chemistry XIV.* Professor Ladd.

VII. Dairy Practice.—Lectures and laboratory practice in Babcock test and in handling milk and making butter on the farm. Herd testing methods. *One recitation and two laboratory credits, second term. Required of Juniors in Animal Husbandry and in Teacher-Training Course in Agriculture; elective for others.* Assistant Professor Burdick.

VIII. Dairy Practice.—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and two laboratory credits, thruout the year. Elective for Seniors in Agriculture.* Assistant Professor Burdick.

IX. Research and Literature.—*Hours to be arranged, first term. Elective for Seniors in Agriculture.* Professor Ladd.

X. Veterinary Practice.—Veterinary anatomy, materia medica, obstetrics, pathology. Combating disease from the farmer's standpoint. Causes and treatment of injuries. *Three recitation credits, first term. Required of Juniors in Agriculture and in Teacher-Training Course in Agriculture. Prerequisite: Zoölogy* X. Professor Ladd.

XI. Animal Husbandry.—Animal Nutrition.—Advanced study of the principles of animal nutrition. Consideration of the classes of food nutrients; functions of each in the body; digestion, absorption and assimilation; demands for maintenance, growth, fattening, milk and work. Compilation of experimental feeding data. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.*

XIIa. Poultry Culture.—A study of all branches of poultry keeping. *One recitation credit, first term. Required of Juniors in Agriculture and in Teacher-Training Course, in Agriculture, and of first-year students in Education Course, Agricultural option. Mr. Brett.*

XIIb. Poultry Culture.—Laboratory work, consisting of pen practice, incubation, brooding, killing and dressing. *Two laboratory credits, second term. Elective for Juniors in Agriculture. Mr. Brett.*

XIII. Judging Poultry.—Practice in judging standard poultry both by comparison and score card methods. *Two laboratory credits, first term. Elective for Seniors in Agriculture. Mr. Brett.*

XIV. Poultry Husbandry.—Study of poultry investigations and experimental work in various lines of poultry keeping. *At least two laboratory credits, thruout the year. Elective for Seniors in Agriculture and option for Seniors in Applied Science. Applied Science first term. Mr. Brett.*

XV. Management of Beef Cattle and Horses.—Studies will be made of successful practices in feeding for the market as well as advertising, fitting for sale and show ring, and the general care and management of beef cattle. Horse production including market classes of horses, their production and utility, and successful methods of handling and training horses. *Two recitation credits, first term. Elective for Seniors in Agriculture. Professor Ladd.*

XVI. Management of Sheep and Swine.—Production of mutton and wool; production of spring lambs; fattening sheep and lambs for market; general care and management of the breeding flock; advertising, fitting for sale and the show ring. Pork production, breeding, care and management, diseases, markets, cost of production. *Two recitation credits, second term. Elective for Seniors in Agriculture. Professor Ladd.*

A. Types and Breeds.—Breeds of horses, cattle, sheep, and swine. Emphasis is placed on the type best fitted to the agriculture of New England. *Two recitation credits, first term;; one recitation credit, second term. Required of Short-Course students in Agriculture, first year. Professor Ladd.*

B. Stock Judging.—Scoring of individuals and judging the various classes of animals and their adaptability to different purposes, as cattle for milk or beef production, horses for driving or draft. *One laboratory credit, thruout the year. Required of Short-Course students in Agriculture, first year. Professor Ladd.*

C. Dairy Practice.—Babcock test for dairy products, production of sanitary milk, and butter making. *One recitation and three laboratory credits, first term. Required of Short-Course students in Agriculture, second year. Assistant Professor Burdick.*

D. Principles of Feeding.—Compounding rations. *Three recitation credits, first term. Required of Short-Course students in Agriculture, second year. Professor Ladd.*

E. Principles of Breeding.—A study of the selection of animals, heredity, and variation. *Two recitation credits and one laboratory credit, second term. Required of Short-Course students in Agriculture, second year. Professor Ladd.*

G. Live Stock Care and Sanitation.—Housing, care, and management of farm animals. Practical directions for handling of stock on the farm. *Three recitation credits, first term. Required of Short-Course students in Agriculture, second year. Professor Ladd.*

H. Poultry Keeping.—Study, demonstrations, and work in all of the practical branches of the poultry department. *Two recitation credits and one laboratory credit, first term; one recitation and two laboratory credits, second term. Required of Short-Course students in Agriculture, first year. Mr. Brett.*

HORTICULTURE.

ASSISTANT PROFESSOR RIMOLDI, MR. MERRILL

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the horticultural building. The main building contains the office and recitation rooms, together with photographic rooms. Attached to this building are greenhouses of modern construction, containing over 9,000 square feet under glass, 3,000 square feet of which is used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords the student an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens, and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity for the study of apples and pears especially. A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects

I. Propagation of Plants.—Different methods, including seed testing. Soft, green, and hardwood cuttings. Layering, grafting, and budding. *One recitation and one laboratory credit, first term. Required of Freshmen in Agriculture. Option for Juniors in Applied Science.*

II. Vegetable Gardening.—Underlying principles and types of vegetable gardening; study of individual crops; text-book work. *Two recitation credits, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option; option for Seniors in Applied Science.*

III. Fruit Culture.—Fundamental principles of orcharding; soil, fertilizer, and cultivation. Methods of laying out orchards and planting. Tillage, pruning, and spraying. Harvesting and storing fruits. Collateral reading and practical work. *Two recitation credits, first term. Required of Juniors in Agriculture, in Teacher-Training Course in Agriculture, and of second-year students in Education Course, Agricultural option.*

IV. Spraying and Pruning.—Preparation and application of spray mixtures; insecticides and fungicides. Methods of application for different orchard enemies, and machinery used. Pruning of fruit trees and ornamental shrubs. *One recitation and one laboratory credit, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option; option for Juniors in Applied Science.*

V. Greenhouse Construction and Management.—Study of the different types of glasshouse structures; methods of heating and ventilating. *One recitation and two laboratory credits, second term. Elective for Juniors in Agriculture.*

VI. Floriculture.—History of floriculture. Study of greenhouse plants, collectively and individually; practical work in propagation, potting, watering, ventilating, fumigating, and spraying. Study of bulbs, bedding plants, palms and ferns. *One recitation and two laboratory credits, entire year. Elective for Seniors in Agriculture. Prerequisites: Horticulture V.*

VII. Horticulture By-Products.—Principles of canning and preserving fruits, manufacture of fruit juices and butters, cider, vinegar, evaporated fruits, pickles, sauces, jams and jellies. The aim of this subject is to equip the student with a knowledge of the means of converting surplus and low grade horticultural products into salable manufactured goods so as to make profits where losses might otherwise occur. *Two recitation credits, first term. Elective for Seniors in Agriculture. Prerequisite: Hort. III or Hort. XVII.*

VIII. Literature of Horticulture.—See Agronomy IX.

IX. Assigned Work.—Special subjects chosen by the student. *Elective for Seniors in Agriculture. Hours to be arranged.*

X. Pomology.—Orchard and bush fruits. Study of types; origin, and history; classification, description, and methods of handling. Orchard management. *One recitation credit and two laboratory credits, thruout the year. Option for Seniors in Agriculture and Applied Science, first term; elective second term. Prerequisite: Horticulture III.*

XI. Advanced Vegetable Gardening.—Study of one or more crops selected by student. Practical work, research work, and text-book. *One recitation credit and two laboratory credits, second term. Elective for Seniors in Agriculture.*

XII. Plant Breeding.—See Agronomy XI.

XVI. Landscape Art.—This subject is designed for students in general, and consists in the study and application of the rules and principles governing landscape design, the layout of farm, village, and city places, making of lawns. The use of ornamental trees and shrubs, flower beds, etc. *One recitation and two laboratory credits, first term. Required of Juniors in Agriculture, in Teacher-Training Course in Agriculture, and of first-year students in Education Course, Agricultural option; option for Seniors in Applied Science. Prerequisite: Botany III.*

XVII. Small Fruits and Grapes.—The strawberry, raspberry, blackberry, dewberry, currant, gooseberry, grape. History; extent of cultivation; and management in home and commercial plantations. *Two recitation and one laboratory credit, second term. Given in alternate years, 1921, 1923. Required of Juniors in Teacher-Training Course in Agriculture, and of second-year students in Education Course, Agricultural option; option for Juniors and Seniors in Agriculture.*

A. Vegetable Gardening.—Fundamental principles of vegetable growing. Practical work in cold frames, hotbeds, and garden planting. *Three recitation credits and one and one-half laboratory credits, second term. Required of Short-Course students in Agriculture, second year.*

B. Fruit Culture.—Study of fruits; propagation; planning fruit gardens and plantations; harvesting and packing; care, including methods used in combating insect pests and plant diseases. Preparation and application of fungicides and insecticides. Study of nozzles, pumps, etc. *Three recitation credits and one laboratory credit, first term; two recitation credits and one laboratory credit, second term. Required of Short-Course students in Agriculture, second year.*

E. Arithmetic and Farm Accounts.—A review course in arithmetic. Types of farm accounts, inventories, project accounts, complete set of farm accounts, special production records. *Three recitation credits, first term, and four recitation credits, second term. Required of Short-Course students in Agriculture, first year.*

F. Marketing of Farm Products.—Kinds of markets, methods of sale, standardization of products, co-operative associations for marketing. *Two recitation credits, second term. Required of Short-Course students in Agriculture, second year.*

G. Propagation of Plants.—A study of the different methods of plant propagation. *One laboratory credit, second term, first year. Required of Short-Course students in Agriculture.*

Art

MISS ELDRED

The purpose of the subjects described below is to meet the drawing requirements of the Science laboratories, to give some knowledge of the principles of design and their practical applications, and to develop the appreciation of beauty in nature and in art. For agricultural and applied science students the work comprises outline

drawing in pencil, from plant and animal forms and from objects chosen to illustrate the principles of perspective. In the home economics course, greater emphasis is placed upon the principles and practice of design, upon the study of color and color harmony, and upon the application of all these to such problems as those of costume and the arrangement, furnishing, and decoration of the home. The brief course in the history of art aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. The department has a considerable equipment of illustrative material for this work, including a collection of about one hundred and fifty casts and some four hundred photographs of folio or larger size, with several thousand smaller prints.

Subjects

II. Pencil Drawing from Objects.—Chiefly drawing from plant and animal forms, with some work in freehand perspective. *One laboratory credit, first term. Required of Freshmen in Agriculture. One laboratory credit, thruout the year. Required of Freshmen in Applied Science, and of first-year students in Education Course, Science option.*

III. History of Art.—A brief survey of European art to about 1850, with the twofold purpose of showing the relation between art and the life of the people in various periods and of developing the appreciation of beauty as found in the fine arts. *Two recitation credits, first term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics.*

V. Drawing in Charcoal from Still Life or the Cast.—*Two or more laboratory credits, second term. Elective.*

VI. Pen-and-Ink Drawing, Water Color or Pastel.—*Two or more laboratory credits, second term. Elective.*

VII. Modeling in Clay, from Cast or Object.—*Three laboratory credits, second term. Elective.*

VIII. Architectural Drawing and Interior Decoration.—The drawing of house plans, etc., and exercises illustrating the application of design principles to the planning, decoration, and furnishing of the home. *Two laboratory credits, second term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics.*

IX. History of American Art.—A study of American art and its relation to the national life. *Two recitation credits, first or second term. Elective.*

X. History of Modern European Art.—A continuation of subject III. *Two recitation credits, second term. Elective.*

XI. Theory of Design.—Costume Design.—Further study of the principles of design taken up in subject XII, with especial reference to their application in costume design. *Two laboratory credits, first term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics.*

XII. Drawing and Design.—An elementary consideration, by means of analysis, criticism, and original design, of the elements of beauty (including color) as exemplified in the industrial arts. *Three laboratory credits, second term. Required of Freshmen in Home Economics, and of first-year students, Education Course, Home Economics option.*

XIII. The Appreciation of Art.—A study of certain masterpieces for the elements of beauty which they present, without especial reference to their historical relations. The aim is to emphasize the operation in the fine arts of the same design principles already studied in the industrial arts, to provide a foundation for the study of the history of art, and to develop increased capacity for the enjoyment of beauty. *Two recitation credits, first or second term. Elective.*

Bacteriology

DR. HADLEY

The instruction in bacteriology is arranged to meet the requirements of two classes of students:

1. In the first place the subject is presented in an elementary way for those whose main interest lies in other fields of work, but who at the same time desire a general knowledge of micro-organisms and their relation to problems of human life, including agriculture, sanitation, foods, and the many problems of personal and public health and hygiene. For such students Bacteriology I₁ and I₂ are offered. The subject requires some familiarity with certain fundamental biological principles, an appreciation of which can be derived thru Zoölogy I or Botany I. For this reason one or the other of these subjects is made a prerequisite. Bacteriology I is taught by means of laboratory work supplemented by lectures and required reading.

2. In the second place the work in bacteriology is arranged to afford opportunity for specialization on the part of the students in the Applied Science Course who anticipate entering some branch of applied bacteriology after graduation. Such specialization naturally looks forward to service in (a) the educational, (b) the commercial, (c) the municipal or (d) the research field, as exemplified by college teaching, private manufacturing laboratories of biologic products, departments of public health (city or state), and the State Agricultural Experiment Stations and privately endowed institutions of research, respectively. For students desiring to specialize in any of these fields, Bacteriology II₁ and II₂ are offered.

These subjects are not suited to, and are not recommended for, students who do not intend to specialize in bacteriology or in a closely allied subject. They should be preceded by advanced language work in German or French III, by other biological subjects which afford a foundation in anatomy (both gross and microscopic) and physiology; and, if possible, should be preceded or accompanied by physiological chemistry (Chemistry XIX).

In Bacteriology II₁, opportunity is offered to acquire advanced bacteriological technique. The program is confined largely to laboratory work. In the second term of advanced bacteriology (II₂) advanced technique is continued with special reference to diagnostic blood tests involving agglutination, precipitation and complement-fixation methods. In addition the student may be permitted to pursue individual work on a selected problem and opportunity is offered to become familiar with some of the methods of bacteriological research. This work may be outlined with special reference to the particular branch of the subject which the student plans to enter, such as agricultural, industrial or pathogenic bacteriology. Bacteriology II₂ also involves assigned reading and the discussion (seminar) of bacteriological and protozoölogical theories and problems, and requires a minimum of ten hours attendance.

Subjects

I₁. General Bacteriology (systematic).—A subject designed to give the student a general knowledge of the bacteria; a study of laboratory methods and technique for the cultivation of bacteria; the isolation and determination of unknown species. *One recitation credit and two laboratory credits, first term. Prerequisite: Botany I or Zoölogy I. Required of second-year students in Education Course and of Juniors in Home Economics. Elective for Juniors and Seniors in other courses. Bacteriology I₁ and I₂ must be taken continuously.*

I₂. General Bacteriology (applied).—A subject designed to acquaint the student with the varied application of bacteriology to practical problems, including the bacteriology of air, water, milk and other dairy products, together with the relation of bacteria to agronomy, dairying, hygiene and to the prevention, diagnosis and treatment of communicable diseases. *One recitation credit and two laboratory credits, second term. Prerequisite: Bacteriology I₁. Required of second year students in Education Course and of Juniors in Home Economics. Elective for Juniors and Seniors in other courses. Bacteriology I₁ and I₂ must be taken continuously.*

II₁. Advanced Bacteriological Technique.—A study of special methods employed in the investigation of bacteriological problems. The work includes the preparation of culture media, the bacteriological examination of air, shell-fish and

meats; a study of enzyme production by bacteria; of acid production; the relation of bacterial growth to oxygen supply; determination of thermal death point, of testing the germicidal power of unknown disinfectants; filtration; pathogenesis and virulence; experimental inoculations, post-mortem examinations; active and passive immunization. *Four laboratory credits, first term. Prerequisite: (beginning 1917), Zoölogy VIII, and (beginning 1918), German or French III. Elective for Seniors who have passed with B grade in Bacteriology I₁ and I₂.*

II₂. Advanced Bacteriological Technique.—Theories and Problems.—Laboratory studies involving the examination of the blood by bacteriological, histological and serological methods; serological diagnosis; forensic blood tests, etc. Assigned reading and discussions. *Four laboratory credits, second term. Elective for Seniors who have passed with credit in Bacteriology II₁.*

Botany

PROFESSOR MERROW

The subjects of this department are fundamental to much of the technical work in agriculture and home economics. Plants for study are near at hand. A great variety of economic plants is grown on the land of the experiment station, and in the fields of the college farm. Many trees and shrubs are cultivated on the campus and plants of the native flora are always available. The greenhouses also furnish much material. The laboratory is equipped with dissecting and compound microscopes, paraffin bath, and simple physiological apparatus. A good working library, including several botanical periodicals, charts, models, and an herbarium of about 6,500 specimens are important factors.

Subjects

I. General Botany.—A study of common plants, their structure, physiology, evolution, and adaptation to environment. *Two laboratory credits and one recitation credit thruout the year. Required of Freshmen in Agriculture and Applied Science, of Sophomores in Home Economics, and of first-year students in Education Course.*

II. Botany of crop plants and weeds.—*Two laboratory credits and one recitation credit, first term. Required of Sophomores in Agriculture and of second-year students in Education course, Agricultural option.*

III. Trees and shrubs.—The determination of native and introduced trees and shrubs in summer and winter condition. *One laboratory or field credit, thruout the year. Required of Sophomores in Agriculture, of first-year students in Education Course, Agricultural option, and of second-year students, Education Course, Science option.*

IV. Forestry.—The management of New England wood lots. *Two credits, second term. Given in alternate years. Option for Juniors or Seniors in Agriculture.*

V. Histology.—Seed plants are studied by the usual histological methods of imbedding, sectioning and staining. *Four laboratory credits and one recitation credit first term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.*

VI. Pathology.—Parastic fungi, the diseases of economic plants caused by them, and the treatment. *Four laboratory credits and one recitation credit, second term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.*

VII. Assigned Work.—*Three credits thruout the year. Elective for Seniors in Applied Science and Agriculture.*

A. Plant Life.—Elementary agricultural botany.—*Two and a half laboratory credits and one recitation credit, thruout the year. Required of Short-Course students in Agriculture, first year.*

Chemistry

PROFESSOR INCE, PROFESSOR HARTWELL, PROFESSOR JACKSON,
MR. BURGESS

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. The work is designed to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including the principal technical processes, and a brief account of the carbon compounds. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Two periods per week for the first half-year and three for the second half-year are devoted to the lectures and recitations, and three hours per week for a half-year to the practical work in the laboratory, where the student has an opportunity to verify some of the chemical theories and to become familiar with substances and their chemical behavior. During the second half of this year the laboratory period is devoted to qualitative analysis, which for Chemical Engineering and Applied Science students continues thru the first half of the Sophomore year. The subject is taught in part by means of recitations and lectures, but mainly by work in the laboratory. Students are required to complete a systematic course in basic and acid analysis, and to analyze correctly a number of alloys, salts, and minerals.

Quantitative analysis is taught mainly by laboratory practice, but sufficient time is devoted to lectures and recitations to teach thoroughly the fundamental principles involved. The work comprises gravi-

metric and volumetric analysis, and the quantitative determination of salts, alloys, ores, minerals, and commercial and food products. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such theoretical and practical knowledge as to prepare him for analytical work of any kind.

The study of organic chemistry begins with a short course, designed to cover the general principles and methods, and to include a description of the more important compounds. The subject is continued by those who wish to specialize in chemistry in a more extended course covering the aromatic series and the chemistry of the dyestuffs, and accompanied by laboratory work in organic preparations and analysis. The theoretical and basic principles of chemistry, with their general application, are thoroly studied by recitation, lectures, and laboratory work in the course in physical chemistry.

The descriptive side of industrial chemistry, which comprises a general survey of the technical applications of chemical principles to the arts and industries, is studied by recitation work; while practical technical operations, such as textile coloring, suited to the needs of the individual student, are studied by laboratory practice.

Agricultural chemistry, required of agricultural students in the Sophomore year, embodies the chemistry of soils and fertilizers, also the chemistry involved in the changes which take place during the growth of animals and plants, as well as in the storage or manufacture of the ordinary farm products.

Subject XXI is intended to familiarize the student with the general field of chemical literature, and to inculcate the habit of keeping up with the recent advance in chemical science by reports and discussion of articles appearing in the chemical journals. This course is preparatory for Subject XX, which involves original investigation.

The laboratory occupies the first floor and a part of the basement of Science Hall, seventeen rooms altogether, including a large general laboratory, organic and analytical laboratories, weighing room, library, large lecture room, recitation room, two offices, store rooms and supply room. It is well equipped with apparatus and consulting library for teaching the subjects mentioned below.

Subjects

I. General Chemistry.—*Two recitation and one and one-half laboratory credits first term. Required of Freshmen in all courses, and of first-year students in Education Courses. Professor Ince, Professor Jackson, Mr. Burgess.*

II. General Chemistry and Qualitative Analysis.—*Three recitation and one and one-half laboratory credits, second term. Required of Freshmen in all courses and of first-year students in Education Courses. Professor Ince, Professor Jackson, Mr. Burgess.*

III. Qualitative Analysis.—Basic and acid analysis; analysis of salts, industrial and natural products. *Three laboratory credits, first term. Required of Sophomores in Applied Science and Chemical Engineering and in Education Course, Science option. Professor Ince, Professor Jackson, Mr. Burgess.*

IVa. Organic Chemistry.—*Three recitation credits and one and one-half laboratory credits, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Required of second-year students, Education Course, Agricultural and Home Economics options, and optional for second-year students, Education Course, Science option. Professor Ince.*

IVb. Organic Chemistry.—*Three recitation credits and one laboratory credit, first term. Required of Sophomores in Home Economics, Agriculture, and Applied Science; elective for others who have completed Chemistry III. Professor Ince.*

V. Organic Chemistry (advanced).—*To be given alternate years. Given next in 1922. Four recitation credits, second term. Required in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Ince.*

VI. Organic Chemical Laboratory.—*Three laboratory credits, second term. Required of Juniors in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry IV. Professor Ince.*

VII. Gravimetric Analysis.—*Analysis of minerals, ores, alloys, and industrial products. Three laboratory credits, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry III. Professor Ince.*

VIII. Volumetric Analysis.—*Five laboratory credits, second term, Junior year. Required of students in Chemical Engineering, and of students who take the Chemical option in Applied Science. Elective for those who have completed Chemistry III. Professor Ince.*

X. Food Analysis.—*To be given alternate years; given next in 1922. Four laboratory credits, second term. Required of Seniors and Juniors in Home Economics and in Teacher-Training Course in Home Economics. Elective for others who have completed Chemistry IV, b. Professor Jackson.*

XII. Physical Chemistry.—*To be given alternate years. Given in 1921. Four recitation credits, second term. Required in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry III. Professor Jackson.*

XIV. Agricultural Chemistry.—*Four recitation credits, second term. Required of Sophomores in Agriculture and of second-year students in Education Course, Agricultural option. Prerequisite: Chemistry I, II and IV, b. Professor Hartwell.*

XV. Gas Analysis.—See Mechanical Engineering XV.

XVI. Industrial Chemistry. *Four recitation credits, first term. Required of Juniors in Chemical Engineering and of Juniors who take the Chemical option in Applied Science. Elective for others who have completed Chemistry IV.* Professor Jackson.

XVII. Industrial Chemistry.—The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis, textile coloring, soap, rubber, refining of oils, water analysis, etc. *Three laboratory credits thruout the year. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical option in Applied Science.* Professor Jackson.

XIX. Physiological Chemistry.—To be given alternate years. Given in 1921. *Four credits, second term. Required of Seniors and Juniors in Home Economics and in Teacher-Training Course in Home Economics; option in Applied Science for Seniors.* Professor Ince.

XX. Assigned Work.—*Three credits, thruout the year. Required of Seniors in Chemical Engineering who do not take the work in the Reserve Officers' Training Corps. Required for the first term of Seniors who take the Chemical option in Applied Science.* Professor Jackson.

XXI. Reports and Discussion of Chemical Subjects and Recent Investigations.—*Two credits, thruout the year. Required of Seniors in Chemical Engineering; and of Seniors taking the Chemical option in Applied Science.* Professor Jackson.

XXII. Organic or Physical Chemistry.—*Two laboratory credits, second term. Required of Seniors in Chemical Engineering, and of those who take the Chemical option in Applied Science.* Professor Ince, Professor Jackson.

XXIII. Chemistry.—Introductory Quantitative Analysis. *Two laboratory credits, second term. Required of Sophomores in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry III.* Professor Ince.

Economic and Social Science

PRESIDENT EDWARDS

I. Economics.—Text-book, supplemented by lectures, reading, and essay. *Three recitation credits, first term. Required of Seniors in all courses, except in Education course, Agricultural and Science options.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.*

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmers, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations; federation of rural social forces. *Elective.*

Engineering,—Chemical

PROFESSOR INCE, PROFESSOR JACKSON, MR. BURGESS.

The course in chemical engineering is based upon the principles of chemistry and of mechanical and electrical engineering. It is designed to prepare men for those industries in which chemical processes play a vital part. The subjects in chemistry aim to train the student thoroly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the various branches of chemical analysis, and to make him familiar with the practical applications of chemistry. The subjects in mathematics, physics, mechanical and electrical engineering aim to give the training necessary to solve the mechanical and electrical problems that present themselves when chemistry is applied to the industries.

While the primary purpose is to turn out men well equipped to take up any line of chemical engineering, yet, owing to the important textile interests in this state, and the increasing importance of the manufacture of chemicals and dyestuffs, especial emphasis is placed on the manufacture and application of dyes. The following are some of the industries which offer opportunities to the chemist and the chemical engineer:—The manufacture of chemicals and dyestuffs; the bleaching and dyëing of cotton, wool, and silk; the manufacture of fertilizers, explosives, hydraulic cement, clay, products, glass, sugar, paper pulp, paper, soap, paint and varnish; the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion or destructive distillation to form gas, coke, and tar, embracing further the whole field of forest-products utilization; and the processes of water and sewage purification.

A detailed description of the subjects will be found under their respective departments.

Engineering,—Civil

PROFESSOR WEBSTER

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various fields of civil engineering. With this object in view, application of the theories and principles learned in the class-room is made in the

field, laboratory, and drafting room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the students' opportunities, the name of the department has been changed from Highway Engineering to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance of highway engineering in this state and thruout the country in general, considerable emphasis is still placed on this phase of engineering work.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and testing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects.

Subjects

I. Surveying.—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering, and in Agriculture.*

II. Topographic Surveying.—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits, second term. Required of Sophomores in Civil Engineering.*

III₁. Railroad Engineering.—The work consists of a reconnoissance, a preliminary and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates are made. A study is also made of the properties of curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Five credits, divided between field and recitation as seems advisable, first term. Required of Juniors in Civil Engineering.*

III₂. Railroad Engineering.—The principles of economic railroad construction and maintenance; railway appliances, ballast, and roadbed, culverts and trestles, turnouts, sidings, yards, terminals, signaling, locomotive and grade problems, betterment surveys, etc. *Three recitation credits, second term. Required of Juniors in Civil Engineering.*

IV. Graphic Statics.—Instruction is given in graphic statics and its application in the design of simple framed structures. *Two recitation credits, first term. Required of Juniors in Civil Engineering.*

V. Roads and Pavements.—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction and maintenance of earth, gravel, and macadam roads, together with a discussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the surveying, leveling, cross-sectioning and designing of a short piece of road. *Three recitation credits and one field credit, second term. Required of Juniors in Civil Engineering.*

VI. Bridge Details.—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *Two laboratory credits, first term. Required of Seniors in Civil Engineering.*

VII. Bridge Analysis.—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

VIII. Bridge Design.—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits, second term. Required of Seniors in Civil Engineering.*

IX. Masonry Construction.—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and a systematic and thoro laboratory course on cement testing is given. *Two recitation credits and one laboratory credit, second term. Required of Seniors in Civil Engineering.*

X. Reinforced Concrete.—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XI. Sewerage.—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers; removal of house sewage; the design and construction of sewers and method of sewage disposal. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of waterworks, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitation credits, second term. Required of Seniors in Civil Engineering.*

XIII. Tunneling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit, second term. Elective for Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XV. Assigned Work.—With the advice and consent of the head of department, the student elects three hours' work in the Senior year. This may be research, thesis, or recitation and laboratory work, depending upon the qualifications of the student. *Three credits, thruout the year. Required of Seniors in Civil Engineering.*

XVII. Metal Structures.—The graphic determination of stresses in steel mill buildings. *One laboratory credit, second term. Elective for Seniors in Civil Engineering.*

XVIII. Irrigation Engineering.—This includes a study of the impounding, diverting, flow, and measurement of water, quantity required, canals, canal works, storage reservoirs, waterways, etc. *Three recitation credits, first term. Elective for Seniors in Civil Engineering.*

Engineering.—Electrical

PROFESSOR ANDERSON AND ASSISTANT PROFESSOR COGGINS

The aim of the course in electrical engineering is to give the student such training in the fundamental principles of the subject as will fit him to take up, in an intelligent and effective manner, any line of engineering work requiring special electrical knowledge. Instruction is given in both class-room and laboratory, the aim of each method of instruction being to supplement the other, and to develop resourcefulness and the habit of independent thought on the part of the students.

Subjects

I. Theory of Direct Currents.—A detailed study of the theory of direct-current apparatus. The theory of dynamos, motors, and auxiliary apparatus. *Three recitation credits, first term. Required of Juniors in Electrical Engineering and of Seniors in Chemical, Mechanical and Civil Engineering.*

II. Direct-Current Laboratory.—A series of tests of various types of direct-current apparatus. These include magnetization and characteristic curves of different types of machines, as well as tests for efficiency, regulation, temperature rise, and tests of a similar nature. *Three laboratory credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

IV. Theory of Alternating Currents.—Recitations and lectures. The elements of the theory of alternating currents and of alternating-current machinery.

This subject includes the simple theories regarding the action of A. C. dynamos, motors, converters, and transformers. *Two recitation credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical and Civil Engineering.*

V. Theory of Alternating Currents.—Recitations and lectures, continuing subject IV. The more advanced theories regarding the effect of inductance and capacity in A. C. circuits, and of the action of A. C. machinery, are discussed. Assigned readings and reports are a feature of the subject. *Three recitation credits, thruout the year. Required of Seniors in Electrical Engineering.*

VI. Alternating-Current Laboratory.—A series of tests of different types of alternating-current apparatus, such as single and polyphase generators and motors, induction motors, converters, and transformers. *Three laboratory credits, thruout the year. Required of Seniors in Electrical Engineering.*

VII. Design of Electrical Machinery.—General principles of the design of electrical apparatus, including a direct and an alternating current generator. *Three laboratory credits, second term. Required of Seniors in Electrical Engineering.*

VIII. Telephone Engineering.—A consideration of the development of the modern telephone, with special reference to the common battery systems. *One recitation credit, second term. Required of Seniors in Electrical Engineering.*

X. Transmission of Energy.—A study of systems of high-tension distribution, the effect of capacity and inductance, the construction of lines, their protection, and the troubles developing in high-tension work. *Four recitation credits, second term. Required of Seniors in Electrical Engineering.*

XI. Electric Railway Engineering.—A discussion of the economic considerations in the development of an electric railway, methods of construction, the location of the generating station, the design of the distributing system, types of motors, and systems of control. *Two recitation credits, second term. Required of Seniors in Electrical Engineering.*

XII. Assigned Work.—Members of the senior class are required to prepare and to present before the class, papers, discussions, and reports upon topics of interest to engineers. As a rule, each student presents about four papers in the course of the year's work.

A portion of the assigned time is also devoted to research work, the amount of time so used varying with the nature of the problem, and the ability of the student profitably to utilize the time. *Three laboratory credits, second term. Required of Seniors in Electrical Engineering.*

Engineering,—Mechanical

PROFESSOR WALES, MR. ELDRED, MR. KNOWLES, MR. OLSON

It is the object of the work in the department of mechanical engineering to turn out broad-gauged, self-dependent men, well trained in engineering theory, familiar with the practical matters of construction and operation, and having some knowledge of the

economic relations which the engineer and industrial development bear to modern society. In the endeavor to train men who will touch life, not at one point, but at many, the work of the department is supplemented and rounded out by extended and vigorous courses along the lines of electrical engineering, physics, mathematics, chemistry, English, history, modern languages, and political economy. The special work of the department of mechanical engineering divides itself naturally into the following general groups: shop practice, design, steam engineering, and experimental engineering. Each of the above groups is amplified and briefly described below:

SHOP PRACTICE

The object of this work is to give familiarity with principles, operations, possibilities, and management, rather than to develop the greatest dexterity in manipulation. Shop practice extends over three years of the course, and comprises forging and foundry work, pattern making, and machine-tool operation. The shops are exceptionally well equipped with machines and tools of all kinds. In the machine shop are six metal lathes, speed lathes, planes, 16-in. shaper, two drills, two tool grinders, drill grinder, milling machine, punching-press, vertical boring and turning mill, together with the usual assortment of tools and auxiliaries. The pattern shop is provided with lathes, circular saw, band saw, jig saw, dowel machine, surface and buzz planers, etc. Fifteen work-benches fully provided with the small tools of the pattern maker complete the equipment. The forge shop is equipped with the usual anvils, forges, fullers, swages, hardies, etc., while a full stock of patterns, shovels, riddles, flasks, and trowels is provided for the work in foundry practice. Enthusiasm is given to the work by the construction of things of real value—a new machine for the shop or a piece of apparatus for the laboratory—instead of spending the whole time on worthless “exercises.”

DESIGN

The work along the lines of design extends thruout the four years, beginning with freehand and mechanical drawing and ending with machine design and power-plant design in the Senior year. Leading up to this final work are the terms of mechanical drawing, descriptive geometry, mechanism, valve gears, dynamics of machines, mechanics, strength of materials, hydraulics, and thermo-dynamics.

All the forces of correct theory and the practice of the most successful builders are brought to bear upon the solution of definite, practical problems.

STEAM ENGINEERING

Steam engineering begins in the Junior year and runs thru the remainder of the course. A rigorous study of the mathematical theory of thermo-dynamics supplies the foundation for the study of boilers and engines, design and economy, and the various devices and auxiliaries of the power plant. In the Senior year is considered the particular branch of heating and ventilating. In this year, also, the subject of power plants is taken up, which applies all the previous training in steam engineering, and which brings together and unifies all allied subjects.

EXPERIMENTAL ENGINEERING

This subject, which extends thruout the Junior and Senior years, is intended to fix the theory developed in all the other lines of work. Instruction is given by means of lectures and laboratory tests. The student becomes familiar with the theory, construction, use, and calibration of the instruments and apparatus used by the engineer, and gains experience in making accurate standard and special tests. The work is divided into four groups: one, dealing with the chemical problems of engineering—testing of gases, oils, fuels, feed water, etc.; a second, with general calibration and testing; a third, with the study and tests of structural materials; and the fourth, with general power-plant testing. In power-plant testing the students make the necessary plans and preparations, perform the experimental work, and prepare formal reports, with recommendations for improvement in economy, etc. These tests are made not only on the college power-plants, but on those of manufacturing establishments of the State. The equipment for experimental work comprises several boilers and steam engines, large steam pump, gas engines, feed-water heaters, several steam and gas engine indicators, steam calorimeters, tanks, scales, injectors, water turbine, hydraulic ram, pulsometer, centrifugal pump, belt pump, weirs, two-stage air compressor, air-brake outfit, meters, gauges, 50,000-lb. tension and compression machine, apparatus for oil and gas testing, fuel calorimeter, complete outfit for testing cements and concretes, etc. Thruout the work the greatest stress is laid upon the correct calculation and interpretation of results, and accuracy and self-dependence are developed to the fullest.

Subjects

I. Mechanical Drawing.—Lettering, freehand sketching, use of drafting tools, geometrical problems, projections, machine parts. *Four laboratory credits, first term. Required of Freshmen in Engineering.* Mr. Eldred.

II. Forge and Foundry.—Forging, drawing, bending, welding, etc. Principles of moulding, core making, and casting. *Two laboratory credits, first term. Required of Freshmen in Engineering.* Mr. Olson.

III. Pattern Making.—Use of tools, bench and lathe work, pattern making. *Two laboratory credits, second term. Required of Freshmen in Engineering.* Mr. Olson.

V. Descriptive Geometry.—Elementary principles; problems relating to the point, line, plane, cylinder and double curved surfaces of revolution, intersections, and developments. *One recitation and two laboratory credits, second term. Required of all Freshmen in Engineering.* Mr. Eldred.

VI₁. Mechanical Drawing.—Detail and assembly drawings, elementary machine design. *Two laboratory credits, first term. Required of Sophomores in Mechanical, Electrical, Civil, and Chemical Engineering.* Mr. Eldred.

VI₂. Mechanical Drawing.—Continuation of Mechanical Engineering VI. *Two laboratory credits, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.* Mr. Eldred.

VII. Machine Shop.—Hand work in chipping and filing, use of machine tools, construction of machines. *Three laboratory credits, first term; required of Juniors in Electrical Engineering. One and one-half laboratory credits, second term: required of Sophomores in Civil Engineering.* Mr. Olson.

VIII. Machine Drafting.—Technique of machine drafting, application of kinematics to the design of gears, valves, linkages, quick-return motions, etc. *Three laboratory credits, first term. Required of Juniors in Mechanical Engineering.* Mr. Eldred.

IX₁. Heat Engineering.—Thermo-dynamics.—Mathematical development and discussion of the laws of thermo-dynamics, and their application to perfect gases, saturated and superheated steam. Theory of air compressors, pneumatic machinery, hot-air engines, gas engines, and refrigerating machines. Boilers, engines, engine economy, effect of cylinder walls, compounding, superheating, use of jackets, varying cut-off, speed, pressure, etc. Flow of fluids, injectors, and thermo-dynamic principles applied to the steam turbine. *Three recitation credits, first term. Required of Juniors in Mechanical, Electrical, and Civil Engineering, and Seniors in Chemical Engineering.* Professor Wales.

IX₂. Heat Engineering.—Continuation of Mechanical Engineering IX. *Three recitation credits, second term. Required of Juniors in Mechanical and Electrical Engineering; and for nine weeks, of Seniors in Chemical Engineering.* Professor Wales.

X₁. Applied Mechanics.—Forces, composition and resolution, parallel forces, moments, couples, centres of gravity, velocity, acceleration, energy and momen-

tum, falling bodies and projectiles, centrifugal force, moment of inertia, radius of gyration, angular momentum, energy of rotating bodies, impact, etc. Solution of practical problems. *Five recitation credits, first term. Required of all Juniors in Engineering.* Professor Wales.

X₂. Applied Mechanics.—Strength of materials, stresses in structures, riveted joints, beam theory, struts, columns, shafting, springs, etc. Solution of practical problems. *Five recitation credits, for six weeks, second term. Required of all Juniors in Engineering.* Professor Wales.

XI. Hydraulics.—General principles, head and pressure, center of pressure, velocity of discharge, flow through orifices and over weirs, Bernoulli's theorem, flow through pipes, flow through conduits and canals, energy of flow, horse-power, hydraulic machinery, rams, turbines, centrifugal pumps, and Pelton wheels Merriman's Treatise on Hydraulics. *Five recitation credits per week, for last twelve weeks of second term. Required of all Juniors in Engineering.* Professor Wales.

XII. Mechanism.—Instantaneous centers, centroids, lobed wheels, belts, pulleys, four-bar linkages, graphical determination of velocity ratios, quick-return motions, straight-line motions, pantographs, trains of gears, epicyclic trains, tooth gearing, epicycloidal and involute teeth, bevel wheels, etc. Schwamb and Merrill's Mechanism. *Three recitation credits per week, second term. Required of Sophomores in Mechanical, Electrical, and Chemical Engineering.* Mr. Knowles.

XIII. Valve Gears and Dynamics.—Plane slide valves, piston valves, riding cut-off valves; Joy and Marshall gears; Stephenson, Gooch, and Walschart link motions; drop cut-off valves; Corliss, Brown, and Putnam valves. Peabody's Valve Gears. Lectures and references. *Three recitation credits per week, second term. Required of Juniors in Mechanical Engineering.* Mr. Knowles.

XIV. Machine Shop.—Advanced work in machine construction. *Three laboratory credits per week, thruout the year. Required of Juniors in Mechanical Engineering.* Mr. Olson.

XV. Experimental Engineering a.—Lectures and laboratory work in gases, oils, and fuels; flue-gas analysis, calculation of air per pound of coal, loss due to excess air and to imperfect combustion; analysis of fuel gases and calculation of heating values; determination of heating values by the Junkers and Parr calorimeters; study of gases in producer and gas-engine work. Analysis of coal and other fuels. Analysis and testing of lubricating and fuel oils. Testing of boiler waters. *One recitation and one laboratory credit, first term. Required of Juniors in Mechanical Engineering.* Professor Wales.

XVI. Experimental Engineering b.—General calibration and testing of engineering instruments and apparatus; gauges; planimeter; manometers; indicators; Prony brakes; scales; valve setting by measurement and by the indicator; Carpenter calorimeter; Peabody calorimeter; flow through orifices; weirs; nozzles; Pitot tube; meters; Venturi meters; hydraulic ram; turbine, etc. *Two laboratory credits per week, second term. Required of Juniors in Mechanical, Electrical and Civil Engineering.* Mr. Knowles.

XVII. Experimental Engineering c.—Properties of materials. Lectures on the metallurgy of iron and steel; effects of impurities; cold-working; repeated stresses; tensile, compressive, and shearing strengths; ductility; resilience, etc.; copper, brass, bronze, and other alloys; timber, stone, and brick. The manufacture of natural and Portland cements; effects of over-and under-burning, over-liming, SO_2 , etc.; discussion of tests and their interpretation. Laboratory work is parallel with lectures. Tensile strengths of cast-iron, wrought-iron, and steel; compressive strength of metals, timber, concrete, cement; shearing tests of metals; transverse tests of timber and iron; stress-strain diagram, elastic limit, yield point, modulus of rupture; tensile tests of cement; pat tests, boiling tests; specific gravity; fineness; time of set, etc. Determination of the best proportions of cement, sand, and rock of given characters. *Two lectures and one and one-half laboratory credits, first term. Required of Seniors in Mechanical, Electrical, and Civil Engineering.* Mr. Knowles.

XVIII. Experimental Engineering d.—Hot-air engine, gas engine, steam pump, injectors, transmission dynamometers; boiler tests; complete tests of power plants; outside work on the H. P. of a stream, with tests of hydraulic power plant; outside tests of manufacturing plants, with calculations, reports, and recommendations. *Two laboratory credits, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XIX. Heating and Ventilation.—Discussion of the principles and practice of the various systems of heating and ventilating—direct and indirect, hot-air, hot-water, pressure steam, exhaust steam, vacuum systems, fans, blowers; calculation of ventilation and radiation; flues, pipes, and radiators; air troubles; central heating systems with central power plants; design of heating system for a given building. *One recitation credit, second term. [Required of Seniors in Mechanical Engineering.* Professor Wales.

XX. Machine Design.—Design of machine parts from considerations of the motions involved, strength, rigidity, and friction; design of a complete machine; calculations with design of some type of engine, starting with given requirement of H. P., speed, etc., and with an assumed theoretical indicator card. *Three laboratory credits, thruout the year. Required of Seniors in Mechanical Engineering.* Mr. Eldred.

XXI. Power Plants and Power-Plant Design.—Study of the various types—as to choice, location, installation, and operation; prime movers, their accessories and auxiliaries.

Steam plants.—Study of the effects on economy, range, and reliability of simple or compound, condensing or non-condensing engines with various valve gears, throttling and cut-off governors, different boiler installations, feed-water heaters, economizers, pressure regulators, pumps, injectors, mechanical stokers, forced and induced draft, chimneys, etc.; calculations of proper sizes, powers, and strengths of machines and apparatus of the power plant; methods of improving economy. The place of the steam turbine in power-plant work.

Hydro Plants.—Discussion of the types of hydraulic machinery, their efficiency, and the particular conditions to which each is best adapted. This will be a development of the previous work in hydraulics to meet the need of the power engineer.

Gas-Producer Plants.—The different suction and pressure producers, theory, capacity, future, etc.; gas engines, from both the thermo-dynamic and the mechanical points of view. *Two lecture credits and one laboratory credit per week, first term. Required of Seniors in Mechanical Engineering. Two lecture credits per week, first term. Required of Seniors in Electrical Engineering.* Professor Wales.

XXII. Assigned Work.—This may be of the nature of research or of specialized study along some particular line of engineering. *Three credits per week, thruout the year. Required of Seniors in Mechanical Engineering.* Professor Wales.

XXIII. Dynamics of Machines.—Analysis of stresses, effects of inertia, balance, reciprocating parts, flywheels, design of high-speed engines and machinery. *Two recitation credits per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XXVI. Business Organization and Management.—The organization of engineering industries, and the laws and methods of business applying to them. *Three lecture credits per week, second term. Required of Seniors in Mechanical and Chemical Engineering.* Professor Wales.

English

Literature, Composition, and Rhetoric

PROFESSOR CHURCHILL, ASSISTANT PROFESSOR PECK

The English department offers subjects in literature and in rhetoric and composition. The required work extends over the four years. Elective subjects in literature are provided for Juniors and Seniors. Both literature and composition subjects place emphasis on the practical and the contemporary phases of the work.

The library is an important factor in the work of the department, as it contains some twelve hundred volumes of representative English and American literature.

Subjects in Literature

IV. Modern Essays.—Study of representative essays of England and America in the 19th and 20th centuries. *Three recitation credits, first term. Required of all Juniors except those in Reserve Officers' Training Corps and in Teacher-Training Course in Agriculture.*

V. Shakespeare.—A course in appreciation, including lectures on the life of Shakespeare, reading of several plays, and careful study of three plays. *Three recitation credits, second term. Required of Seniors in Agriculture, Applied Science, Home Economics, and in Teacher-Training Course in Home Economics.*

VI. Current Literature and Composition.—A critical study of contemporary work as it appears in a periodical of the type of the *Atlantic Monthly*. Practice in writing familiar essays and short stories. *Two recitation credits thruout the first term. Option for Freshmen in Home Economics.*

VII. The English Novel.—Study of the development and technique of the novel in England. *Two recitation credits, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics Courses.*

XI. American Poetry.—An appreciative reading study of American Poetry as a whole, using Bronson's "American Poetry" as a basis for the work, followed by a brief study of modern verse in America and Europe. *Two recitation credits, first term. Elective as an extra for Juniors and Seniors in Applied Science. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics.*

XII. Contemporary Drama.—Lectures on the history and development of the drama. Study of contemporary drama of America and Europe. *Two recitation credits, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics Courses.*

Either VII or XII will be offered if six or more students ask for the course.

Rhetoric and Composition

I. Rhetoric and Composition.—Outlines of rhetorical theory, study of models illustrating the various literary forms, exercises, weekly themes. *Three recitation credits, thruout the year. Required of Freshmen in all courses.*

II. Newspaper Work.—The technique of structure and style as applied to newspaper methods. Daily practice, special emphasis on editorial paragraph writing, based on the study of current events. *One recitation credit, first term. Required of Sophomores in Home Economics.*

III. Argumentation.—Theory and Practice. Training in the principles of brief-drawing; weekly practice in extemporaneous speaking and debating. *Two recitation credits, second term. Required of Sophomores in all courses.*

VIII. Interpretive Reading.—Training in the fundamental principles of pronunciation, articulation, emphasis, inflection, phrasing, quality, force, pitch, rhythm. Besides the ultimate practical purpose, this course is intended to give the necessary preparation for effective public speaking in the courses in debate and oratory during the Junior and Senior years. *One recitation credit, second term. Required of Sophomores in Home Economics.*

IX. Debating.—Instruction and practice in the art of debate. *One recitation credit, first term. Required of Juniors in Agriculture, Applied Science and Engineering. Juniors in Home Economics may elect work for an additional hour of credit.*

Geology

Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to those characteristics of rocks which are of chief importance in connection with road construction.

Subjects

I. Geology.—*Two recitation credits, second term. Required of Juniors in Civil Engineering and Sophomores in Agriculture and Applied Science, and of first-year students, Education Course, Science and Agricultural options.*

History

PRESIDENT EDWARDS, PROFESSOR CHURCHILL

I. Social, Economic, and Industrial History of the United States.—*Three recitation credits, second term. Required of all Juniors not in Reserve Officers' Training Corps.*

II. Government and Politics in the United States.—*Three recitation credits, second term. Elective.*

III. Modern European History.—*Three recitation credits, first term. Required of Sophomores in all courses and of first-year students in Education Course, Home Economics option.*

Home Economics

PROFESSOR BEMIS, ASSISTANT PROFESSOR PEPPARD

There are two home economics laboratories: a small building near South Hall is used for the foods, dietetics and nutrition classes. It is well lighted and ventilated and equipped for sixteen students. The clothing laboratory is housed in Davis Hall and accommodates sixteen students. The latest books for reference in home economics courses are kept in the library and are at the disposal of the students at all times.

Subjects

I. Garment Making.—Instruction and practice in hand and machine sewing, pattern making, adaptation of commercial patterns applied to making undergarments and simple wash dresses. The study of the development of the textile industry, manufacture of fabrics, and of woman's place in industry with reference to clothing and textiles. *Three and one-half credits, first term. Required of Freshmen in Home Economics, and in Education Course in Home Economics.*

I₂. Garment Making.—Continuation of Home Economics I₁.—*Three and one-half credits, second term. Required of Freshmen in Home Economics and in Education Course in Home Economics.*

III. Hygiene.—Presentation of the factors that make for healthy bodies and sound nerves. A readjustment of habits to meet the conditions of group and community life. *One recitation credit, first term. Required of all women, freshmen year.*

IV₁. Foods.—Sources, manufacture, and chemical composition of foods and the relation of the principles of chemistry, physics, biology, and bacteriology to the cookery processes and digestion of foods; selection and combinations of foods, their comparative nutritive and economic values and their place in the diet. *Three laboratory credits, first term. Prerequisite: Chemistry I and II. Required of all Sophomores in Home Economics.*

IV₂. Foods.—Continuation of Home Economics IV₁. *Three laboratory credits, second term. Required of all Sophomores in Home Economics.*

VII. House Planning and Furnishing.—Evolution of the house, its adaptation to modern conditions, principles involved in planning, furnishing and decorating the house from the standpoint of convenience, economy, health, and art. *One recitation and one laboratory credit, second term. Required of Juniors in Home Economics.*

VIII₁. Dietetics.—Nutritive value of foods and the daily food requirements; dietary studies based on family budgets of varying incomes; the making of menus and preparation of meals. *Two recitation and one laboratory credits, first term. Prerequisites: Chemistry IV, Zoölogy X, Home Economics IV. Required of Juniors in Home Economics, in Teacher-Training Course in Home Economics and in Education Course, Home Economics option, second year.*

VIII₂. Dietetics.—The study of digestion and metabolism under conditions of health; variations in the diet necessary in pathological conditions and dietetic treatment in certain diseases. *Two recitation and one laboratory credits, second term. Prerequisite: Home Economics VIII₁. Required of Seniors in Home Economics, and in Teacher-Training Course in Home Economics.*

IX. Sanitation.—Study of location of the house, heating, lighting, water supply, plumbing, and care of the house with reference to health, convenience, and cost. Public sanitation as it relates to the household is considered. *Two recitation credits, first term. Required of Juniors in Home Economics, in Teacher-Training Course in Home Economics, and of second-year students in Education Course, Home Economics option.*

XII. Home Nursing.—Suitable furnishing and arrangement for the sick room; care of patient—bathing, moving, feeding, etc.; first aid and emergency measures; hygiene of infectious and contagious diseases; care of infants and children. *Two recitation credits, second term. Required of Juniors in Home Economics, in Teacher-Training Course in Home Economics and of second-year students in Education Course, Home Economics option.*

XVIII₁. Dressmaking.—Consideration of quality, suitability, and cost of materials used in making simple wool and silk dresses. Adaptation of art principles in selection of designs. *Two laboratory credits, first term. Required of Sophomores in Home Economics and of second-year students in Education Course, Home Economics option. Prerequisites: Home Economics I₁ and I₂.*

XVIII₂. Continuation of XVIII₁. *One recitation and two laboratory credits, second term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics, and of second-year students in Education Course, Home Economics option.*

XXI. Home Administration.—Care of home, planning and executing daily and weekly routine for group of five or more, division of income and making of budgets; planning and serving meals on given cost, and consideration of service for simple and more formal occasions. *Three laboratory credits, first term. Required of Seniors in Home Economics, and in Teacher-Training Course in Home Economics. Prerequisite: Home Economics VIII.*

XXV. Costume Design.—A study of principles of design and their application to dress. Study of form, line and color combinations in their relation to the individual. Practice in handling and draping fine material. Study of color and textiles as related to different types of hat and the making and trimming of these types. *Three laboratory credits, second term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics. Prerequisite: XVIII₂.*

XXVI. Textiles and Clothing Economics.—Artistic and economic considerations in selection and purchase of materials for clothing and household furnishing, with emphasis on identification of textile materials, as to price, width, and weave; economic and social conditions which affect their value. Study of clothing budgets. *Two laboratory credits, first term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics. Prerequisites: Home Economics I₁ and I₂, XXIII.*

XXVII. Applied Household Mechanics.—The construction, care and use of the various pieces of machinery used in the home for heating, lighting, ventilating, cleaning, cooking and sewing. *One lecture and one laboratory credit, second term. Required of Sophomores in Home Economics, and of first-year students in Education Course, Home Economics option.*

Mathematics

PROFESSOR TYLER, ASSISTANT PROFESSOR BILLS

Subjects

I. College Algebra.—*Five recitation credits, nine weeks, first term. Required of Freshmen in Engineering and Applied Science and of first-year students, Education Course, Science option. Professor Tyler, Assistant Professor Bills.*

II. Trigonometry.—*Five recitation credits, nine weeks, first term. Required of all Freshmen except Home Economics students, for whom it is optional; also required of first-year students, Education Course, Science and Agricultural options. Professor Tyler, Assistant Professor Bills.*

III. Higher Algebra.—*Five recitation credits, nine weeks, first term. Required of Freshmen in Agriculture and of first-year students, Education Course, Agricultural option, and optional for students in Home Economics.* Assistant Professor Bills.

VIII. a. Trigonometry completed and Analytics.—*Five recitation credits, second term. Required of Freshmen in Engineering and of first-year students, Education Course, Science option.* Professor Tyler, Assistant Professor Bills.

VIII. b. Trigonometry completed and Elementary Analysis.—*Four recitation credits, second term. Required of Freshmen in Applied Science.* Assistant Professor Bills.

X. Calculus.—*Five recitation credits, first term. Required of Sophomores in Engineering.* Professor Tyler.

XI. Calculus (completed).—*Five recitation credits, second term. Required of Sophomores in Engineering.* Professor Tyler.

XIV. Spherical Trigonometry.—*One recitation credit, first term. Elective as an extra.*

XV. Solid Analytics.—*One recitation credit, second term. Elective as an extra.*

Military Science and Tactics

CAPTAIN KNIGHT

All male college students are required to take military instruction during the first two years unless excused by reason of physical disability. During this period they are enrolled in the Reserve Officers' Training Corps. During the remainder of their period in college they may continue in the military department or take physical training instead.

The primary object of the Reserve Officers' Training Corps is to qualify, by systematic and standard methods of training, young men for reserve officers of the United States Army. The system of instruction as prescribed presents to the students a standardized measure of that military training which is necessary in order to prepare them to perform intelligently the duties of commissioned officers in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers.

Under the provisions of the National Defense Act of June 3, 1916, as published in special Regulations, No. 44, War Dep't., 1919, any student who has completed two academic years of service in the Reserve Officers' Training Corps, and has been selected for further training by the president of the institution and by its professor of military science and tactics, and who has agreed in writing to con-

tinue in said Corps for the remainder of his period in college, devoting five hours per week to the prescribed military training, and who further agrees to take the prescribed camp training, may be furnished with an allowance for subsistence amounting to about 40 cents a day.

Subsistence while in camp, and railroad fare to and return will be paid by the United States. Extra articles of uniform necessary for camp will also be furnished.

Upon the completion of all required work in connection with the Reserve Officers' Training Corps graduates will be commissioned as reserve second lieutenants of the Army.

When a unit of the Reserve Officers' Training Corps has been established at an institution, the Quartermaster's Corps of the Army will issue or provide one complete olive drab regulation uniform for each student undergoing instruction. It is also the policy of the War Department to issue for each unit of the R. O. T. C. the latest model rifle and equipment, in-so-far as the supply and the appropriations of Congress permit.

This has already been done to the extent of supplying the college with the model of 1917 rifle, the complete infantry equipment, one Browning Machine Gun, and one Browning Automatic Rifle.

UNIFORM.—The following articles of uniform clothing will be issued by the Quartermaster Corps of the Army, free of charge, to each student enrolled in the Reserve Officers' Training Corps:

- 1 Coat, Wool O. D.
- 1 Breeches, Wool O. D.
- 1 pr. Shoes, Russet.
- 2 Shirts, Flannel O. D.
- 1 pr. Leggins, Canvas.
- 1 Cap, Service.
- 1 Belt, waist.
- 1 Ornament, Cap.
- 2 Ornaments, Collar.

This uniform must be worn during all military instruction, and may be worn at other times as desired. The wearing of clothing part uniform and part civilian is prohibited. Articles lost or unnecessarily worn or damaged must be replaced by the student at his own expense. This uniform remains the property of the United

States and must be turned in by the student during the summer vacation and upon withdrawing from college.

Subjects

I. Military Art.—Practical.—(a) *First Year*. Physical drill; Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad, Company, and Battalion close and extended order; preliminary instruction in sighting and aiming drills; gallery practice; nomenclature and care of rifle and equipment; ceremonies; manuals; bayonet combat; intrenchments; first-aid instruction; target practice. (b) *Second Year*. Same as (a), combat and collective firing in indoor ranges if possible; signaling; work with sand table. (c) *Third Year*. Duties consistent with rank as cadet officers or non-commissioned officers in connection with (a) and (b); military sketching. (d) *Fourth Year*. Same as (c). *Two exercises of one hour each, counting as one credit for each term. Required of all male Freshmen and Sophomores, and all Juniors and Seniors taking the advanced course in the Reserve Officers' Training Corps.*

II. Military Art.—Theoretical.—*First Year*. Theory of target practice, military organization; service of information; service of security; map reading; lectures on general military policy as shown by military history of the United States and military obligation of citizenship; combat (to be illustrated by small tactical exercises); Infantry Drill Regulations, to include School of the Company; camp sanitation for small commands; personal hygiene. *One recitation credit thruout the year. Required of all Freshmen.*

IV. Military Art.—Theoretical.—*Second Year*. Infantry Drill Regulations, to include School of Battalion and Combat; Small Arms Firing Regulations; lectures as in II; map reading; marches and camps; camp sanitation and camp expedients; military history (recent); service of security and information (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping). *One recitation credit thruout the year. Required of all Sophomores.*

V. Military Art.—Theoretical.—*Third Year*. Minor tactics; field orders; map maneuvers and problems; company administration (papers and returns); property accountability; method of obtaining supplies and equipment; military history; elements of international law. *Three recitation credits thruout the year. Required of all Juniors in the Reserve Officers' Training Corps.*

VI. Military Art.—Theoretical.—*Fourth Year*. Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings; international relations of America; gradual growth of the principles of international law embodied in American diplomacy, legislation, and treaties; psychology of war; general principles of strategy only, planned to show the intimate relationship between the statesman and the soldier; military history and policy; the rifle in war. *Three recitation credits thruout the year. Required of all Seniors in the Reserve Officers' Training Corps.*

Modern Languages

PROFESSOR JAECK

FRENCH

I. Elementary French.—Grammar, dictation, pronunciation, composition, conversation, reading of easy prose and poetry. *Three recitation credits thruout the year.*

II. Intermediate French.—Reading, composition, conversation, first semester; Introductory Scientific French, second semester. *Three recitation credits thruout the year.*]

III. Advanced Scientific French. — *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Literary French.—Critical study of literary masterpieces both modern and classical. *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

GERMAN

I. Elementary German.—Grammar, dictation, pronunciation, composition, reading of easy texts in prose and poetry. *Three recitation credits thruout the year. Required of students in Applied Science when German is not offered for entrance.*

II. Intermediate German.—Reading, composition, conversation, first semester; Introductory Scientific German, second semester. *Three recitation credits thruout the year. Required of Sophomores in Applied Science.*

III. Advanced Scientific German. — *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Literary German.—Critical study of literary masterpieces both modern and classical. *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

SPANISH

I. Elementary Spanish.—Grammar, dictation, pronunciation, composition, conversation, reading of easy texts in prose and poetry. *Three recitation credits thruout the year.*

II. Intermediate Spanish.—Reading, composition, conversation, first semester; Industrial and Commercial Spanish, second semester. *Three recitation credits thruout the year.*

III. Modern Spanish Literature.—Critical study of modern masterpieces in the drama and novel. *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Classical Spanish Literature. — *Three recitation credits thruout the year. Elective for students who have completed I, II, and III or their equivalents.*

Music

ASSISTANT PROFESSOR PECK

I. Elementary Harmony and History of Music.—Two hours a week are devoted to the study of harmony including musical notation, formation of triads, and chords of the seventh. The third hour is devoted to the history of music from early music thru that of Beethoven. Lectures, assigned readings, reports, musical illustrations. *Three recitation credits, first term.*

II. Harmony and Appreciation.—The work in harmony is a continuation of subject I, leading to elementary original work in composition. The study of the appreciation of music is intended to develop musical perception or the ability to listen to good music intelligently. Musical theory, musical forms, study of the lives and works of the greatest composers and their relation to the development of music. *Three recitation credits, second term. Open to students who have completed I.*

III. The Oratorio and the Symphony.—A study of the development of these two forms. Students taking this subject should be able to sing and play simple music. *Two recitation credits, first term. Open to students who have completed I and II or their equivalent.*

IV. Masters in Music.—A detailed study of the works of certain of the greatest composers. Lectures, analyses, and assigned readings. *Two recitation credits, second term. Open to students who have completed one full year in music.*

Physics

PROFESSOR ANDERSON, ASSISTANT PROFESSOR COGGINS

Physics is regarded as a fundamental science, a mastery of which is essential to success in engineering or in any calling involving the application of scientific methods and processes. Therefore emphasis is placed upon the practical applications of the principles involved, not only for the purpose of affording preparation for future work, but with the idea of stimulating the student to an interest in his professional work.

At the same time, some effort is made to present the subject from the standpoint of a pure science, and to instill in the student a respect for scientific methods, and to prepare him for advanced work in research and investigation. Advanced mathematics is employed, wherever its use is deemed necessary for a rigorous and complete development of the subject.

Instruction is given in both class-room and laboratory, the two methods being closely correlated. The department is equipped with many pieces of high-grade apparatus. In mechanics, special attention is given to problems involving mass, force, motion and energy.

In the laboratory of heat measurements, the problems involved in the transformation of heat into energy are strongly emphasized.

In light, the department is able to carry on work of the usual college grade, being well equipped with high-grade photometers, spectrometers, etc.

The laboratory of electrical measurements is particularly well equipped for the carrying on of work in this line.

Subjects

I. Descriptive Physics.—Designed for students in Agriculture and Home Economics. The subject furnishes an excellent foundation for further work in physics. *Five recitation credits, second term. Required of Sophomores in Agriculture and Home Economics, and of second-year students, Education Course, Agricultural option.*

II. General Physics.—A mathematical treatment of the subject, in which a knowledge of elementary physics is presupposed. *Four recitation credits, thruout the year. Required of all Sophomores in Engineering and Applied Science, and of second-year students, Education Course, Science option.*

III. Laboratory Physics.—A series of physical measurements intended to teach students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits, thruout the year. Required of Sophomores in Engineering and Applied Science, and of second-year students, Education Course, Science option.*

V. Electrical Measurements.—A laboratory course in electrical measurements in which instruments of precision are used. The study of such instruments as the potentiometer and its use in the calibration of ammeters and voltmeters, the Decade Box Bridge, Kelvin Double Bridge, and the measurement of the capacity of condensers and self-induction of coils. *One and one-half laboratory credits, first term. Required of Seniors in Electrical Engineering.*

VI. Principles of Illumination.—A study of different sources of light, photometrical measurements, and the principles of illuminating engineering. *One recitation credit and one and one-half laboratory credits, first term. Required of Seniors in Electrical Engineering.*

Physical Education

MR. MURRAY, MISS HEMPHILL

The aim of the department of physical education is to give those students taking work in the department such scientific physical training as to best develop a normal body. Every student in the institution is required to take at least two hours' work in Practical Military Art (see pp. 83-84) or physical training.

Recent events have shown the great need of better physical development among the youth of our country, together with more scientific and thorough application of the methods of physical education in our American colleges. During the past year, this college has required practically every student to take regularly some form of physical training, thus causing the development of a better physical body as well as mental improvement.

The following lines of activity will be conducted:

Football.—Commencing with the opening of the College year in September and continuing until the latter part of November and during the last six weeks of the college year, work will be conducted in this sport. Aside from the Varsity team, class teams will be developed. All male students are urged to take part in this work.

Basketball.—Following the close of the football training in November, basketball work will be commenced and will continue until the latter part of March. Varsity and class teams will be developed as in football.

Baseball.—Work in baseball is commenced with practice in the gymnasium the middle of February and will continue with outdoor work when weather permits until the end of the college year. Varsity and group teams will be developed.

Boxing.—This form of exercise requires a rigorous course in calisthenics to develop and strengthen the entire physique. Classes begin at the opening of the school year and continue until the end of the year.

Cross Country.—Cross country work will be started in the Fall and continued until the Thanksgiving recess. The country surrounding the college is ideal for this line of work, which should prove of interest to many students.

Track.—Training in track work will begin on the board running track after the Christmas holidays and will be continued on the cinder track in the spring as weather permits. Some form of track athletics should be participated in by all male students.

Gymnasium Work.—A.—For men.—A complete course in calisthenics will be offered for men students desiring this form of exercise. These courses will be so arranged as to allow all students of the institution to take at least two hours per week thruout the year in the gymnasium.

B.—For women.—All women students are required to take gymnasium work unless excused by a physician's certificate. The uniform for the work consists of a pair of black wool bloomers, a white middy blouse with black tie, black stockings and white gymnasium shoes. *One laboratory credit thruout the year. Required of all women students.*

Psychology and Education

PROFESSOR CARROLL, PROFESSOR BIRD, PROFESSOR WELLS

I. History of Education.—A study of the growth of American educational institutions and practices with the purpose of giving a view of present-day problems in the light of their historical evolution. Sufficient attention is given to the history of education in Europe to indicate influences affecting American developments.

Following the general course in the history of education the last third of the term is given to the special history of the educational movement in the line of work in which the student is specializing:

- a. Agricultural Education (see Vocational Education I).
- b. Home Economics (to be arranged).
- c. Science (to be arranged).

Three recitation credits, second term. Required in Applied Science, Home Economics and Teacher-Training Courses. Professor Wells.

II. Principles of Secondary Education.—The secondary school involving a study of its general character and purpose, the school population, the materials of instruction, methods and management. *Three recitation credits, first term. Required in Applied Science, and in Teacher-Training Courses. Professor Wells.*

III. Rhode Island Education.—A study of the educational movement in Rhode Island, together with the law of the State in relation to the schools. School Administration, School Finance, Professional Ethics, Organization of Vocational Education under Federal law. *Three recitation credits, second term. Required in Applied Science, and in Teacher-Training Courses.*

IV. General Psychology.—Structure and functions of mental life; simple experiments. *Three recitation credits, first term. Required in Applied Science, Home Economics and Teacher-Training Courses.*

V. a. Educational Psychology.—A study of individual and group behavior in relation to the learning process; the nervous system as the organ of behavior, educational significance of unlearned tendencies to action, the functions of feeling, habit, imagination, and rational thinking in conduct, economy in securing retention of ideas, pedagogical applications of the psychology of attention and interest, conditions necessary for effective thinking. Lectures, discussions and simple experiments. *Three credits, second term. Elective in Applied Science, Home Economics and Teacher-Training Courses.*

V. b. Educational Psychology.—The psychology underlying principles of teaching with special reference to secondary subjects, school athletics and clubs, the use of educational and intelligence tests and measurements, methods of detecting vocational aptitudes. *Elective. One credit, second term.*

Vocational Education

MR. SPANTON, MISS WRIGHT

The object of the subjects offered in Vocational Education is to provide the necessary professional training for students in the Departments of Agriculture and Home Economics who are preparing themselves to teach these vocational subjects in the schools of the State.

Subjects

I. History of Agricultural Education.—A survey of the rise and development of Elementary, Secondary and Collegiate Agricultural Education thruout the United States. *Three recitation credits, last six weeks, second term, Junior year.* For the work of the first twelve weeks of the term, see Psy. and Ed. I. *Required of Students in Agricultural Teacher-Training Course.* Mr. Spanton.

II. Practice Teaching Agriculture.—Practical class-room experience in the conducting of recitations and laboratory work in Secondary Agriculture under supervision. *Three recitation credits, first term, Senior year.* *Required of Students in Agricultural Teacher-Training Course.* Mr. Spanton.

III. Practice Teaching Agriculture.—Continuation of Practice Teaching II. *Three recitation credits, second term, Senior year.* *Required of Students in Agricultural Teacher-Training Course.* Mr. Spanton.

IV. Special Methods in Agriculture.—A study of the Smith-Hughes Law in so far as it relates to Vocational Agricultural Education. Preparation and presentation of the subject matter in the class-room and laboratory. Arranging courses of study, preparation of lesson plans, conducting of field trips and supervision of Home Project Work. *Three recitation credits, second term, Senior year.* *Required of Students in Agricultural Teacher-Training Course.* Mr. Spanton.

V. Teaching Home Economics.—A study of methods, curricula, and equipment, and the making of lesson plans; observations and criticisms followed by supervised teaching. *One recitation and one laboratory credit, first term.* *Elective for Seniors in Home Economics, and required of Seniors in Teacher-Training Course, Home Economics option.* Miss Wright.

Zoölogy

PROFESSOR BARLOW

The work in this department is designed to meet the needs of two classes of students: those who are interested in the economic aspect of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic aspects of the different orders. Much time is given to entomology, and in this subject special attention is

given to injurious forms. For those who are to be teachers, a thorough training is given in the morphology and classification of animals as a preparation for the more special subjects that follow. In these, attention is directed to the habits and relations of animals, which are studied both in the field and in the laboratory.

The laboratory is equipped with a series of charts, valuable models, and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about one hundred cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes. The necessary instruments for laboratory work can be procured at small cost at the college store.

Subjects

I. Invertebrate Zoölogy.—A subject in the morphology and classification of invertebrates. *Given in alternate years; next given in 1922. One recitation and three laboratory credits, second term. Option for Juniors and Seniors in Applied Science. Required of second-year students in Education Course, Science option.*

II. General Zoölogy.—Lectures and field work on the distribution and habits of animals. Special studies of local areas and typical animal communities. *Given in alternate years; next given in 1922. One and one-half laboratory credits, second term. Option for Seniors in Applied Science.*

IV. Economic Entomology.—*One laboratory credit and three recitation credits, second term. Given in alternate years; next given in 1921. Option for Juniors in Agriculture and Applied Science.*

V. General Entomology.—*Two laboratory credits and one recitation credit, first term; two laboratory and two recitation credits, second term. Elective for Juniors and Seniors in Applied Science.*

VI. Systematic Entomology.—*Three or five laboratory credits per week, throughout the year. Elective for those who have taken or are taking Zoölogy V.*

VIII. a. Histology.—The usual methods of imbedding and sectioning tissues and the study of the principal organs by these methods. *Three laboratory credits, first term. Option for Juniors and Seniors in Applied Science and Home Economics. Elective in Teacher-Training Courses. Given in alternate years; next given in 1922.*

VIII. b. Embryology.—Laboratory and text-book study of the development of vertebrates. *Two recitation credits and one laboratory credit, second term. Given in alternate years; next given in 1921. Required of second-year students, Education Course, Home Economics option. Option for Seniors in Applied Science.*

IX. Bird Life.—Field studies of native birds. *One and one-half laboratory credits, second term. Elective.*

X. a. General Zoölogy. Introductory Course. Structure and physiology of type forms. *Two recitation and two laboratory credits, first term. Required of Freshmen in Home Economics, of first-year students in Education Course. Home Economics and Science options; of second-year students in Education Course, Agricultural option, and of Sophomores in Agriculture and Applied Science.*

X. b. Anatomy and Physiology.—The structure of higher vertebrates and human physiology. *Two recitation and two laboratory credits, second term. Required of Freshmen in Home Economics, and of first-year students in Education Course, Home Economics and Science options, of second-year students, Agricultural option and of Sophomores in Agriculture and Applied Science.*

A. Elementary Economic Zoölogy.—Injurious insects are chiefly studied. *Two recitation credits thruout the year. Short Course in Agriculture.*

Student Organizations

Agricultural Club

JAMES EDWARD KNOTT.....	President
EDMUND C. EASTWOOD.....	Vice-President
DOUGLAS B. SEABURY.....	Treasurer
ALBERT P. SISSON.....	Secretary

Chemical Society

LEONARD J. KWASHA.....	President
CARL FRITZ.....	Secretary
ROCCO PEZZULLO.....	Treasurer

Debating Society

H. B. SMITH.....	President
ESTHER PETERSON.....	Vice-President
AMY A. WHITFORD.....	Secretary-Treasurer

The Beacon

FREDERIC R. BRIGGS.....	Editor-in-Chief
HOWARD B. SMITH.....	Managing Editor
WILLIAM B. CARNIE.....	Business Manager

Men's Student Council

FREDERIC R. BRIGGS.....	President
CLARENCE E. NORDQUIST.....	Vice-President
HAROLD E. WHITAKER.....	Secretary

Young Men's Christian Association

.....	President
ANDREW N. WEBSTER.....	Vice-President
FREDERICK C. REYNOLDS.....	Secretary
WALTON BUTTERWORTH.....	Treasurer

Young Women's Christian Union

ELIZABETH STILLMAN.....	President
LOUISE DAMON.....	Vice-President
FLORA M. ANDERSON.....	Secretary

Women's Student Council

AMY WHITFORD.....	President
ELIZABETH STILLMAN.....	Treasurer
FLORA ANDERSON	} Junior Members
LUCILE KOHLBERG	
MARTHA SMITH	} Sophomore Members
LILLIAN SMITH	
CAROLINE TABOR	} Freshman Members
MARTHA WINTER	

Girls' Glee Club

HELEN E. PECK.....	Leader
ELSIE THACKRAY.....	Pianist
EMILY C. CAMPBELL.....	Treasurer
DOROTHY CLARKE.....	Registrar

Battalion Organization. January 7, 1920

RESERVE OFFICERS TRAINING CORPS

Commandant

CAPTAIN ALFRED S. KNIGHT, Infantry, U. S. Army

CADET OFFICERS AND NON-COMMISSIONED OFFICERS

Field and Staff

Major.....	MILTON W. GARDINER, 2nd Lt., M. G., U. S. R.
Adjutant.....	HAROLD F. KERN, 2nd Lt., Inf., U. S. R.
Supply Officer.....	GEORGE A. CHANDLER
Sergeant Major.....	A. GORDON ADAMS

Company "A"

Captain.....	WALTER W. MOORE
First Lieutenant.....	FRANK TOTMAN
Second Lieutenant.....	PETER L. SIMONINI
First Sergeant.....	MARSDEN P. EARLE
Sergeant.....	JAMES H. HOLDEN
Sergeant.....	JOHN M. DONEGAN
Sergeant.....	LOUIS E. PASTORINI
Sergeant.....	ALFRED C. BARTON, JR.
Sergeant.....	JOHN H. REED
Sergeant.....	LLOYD H. FISHER
Corporal.....	EDWARD J. SULLIVAN
Corporal.....	EDWIN H. COKER
Corporal.....	EVART YARVOTS
Corporal.....	ANDREW H. WEBSTER
Corporal.....	CLIFFORD H. MOSHER
Corporal.....	WADE A. MOREHOUSE
Corporal.....	JAMES F. GREENE
Corporal.....	ARTHUR N. HAMMARLUND
Corporal.....	HAROLD C. WARDEN

Company "B"

Captain.....	VERNON J. WILBOURN
First Lieutenant.....	VINAL HASTINGS
Second Lieutenant.....	FREDERICK M. RHODES
First Sergeant.....	WILLIAM H. SIMAS

Sergeant.....	EDWARD L. GODFREY
Sergeant.....	JOHN F. NYE
Sergeant.....	FREDERICK A. TURNER
Sergeant.....	LYNDON R. RHODES
Sergeant.....	AUSTIN J. DONNELLY
Sergeant.....	GEORGE H. DAVIS
Corporal.....	FREDERICK H. TITCHENER
Corporal.....	CHARLES S. GARDNER
Corporal.....	ALVAN J. ALLEN
Corporal.....	WATSON C. GILLIS
Corporal.....	CLARENCE F. MARSHALL
Corporal.....	VASLET L. HOWE
Corporal.....	WILLIAM J. ANTULONIS
Corporal.....	JOHN C. HOWLAND
Corporal.....	WILLIAM A. RAILTON

Prizes and Honors

PHI KAPPA PHI

In the spring of 1913 was organized at Rhode Island State College a chapter of Phi Kappa Phi, a national scholarship society, whose purpose, as stated in the preamble of the constitution, is "to provide a Fraternity, dedicated to the Unity and Democracy of Education, and open to honor graduates of all departments of American Universities and Colleges."

The national society was founded at the University of Maine, in 1897. Since then, the number of chapters has increased to fourteen, in the following states, respectively: Alabama, Delaware, Florida, Georgia, Iowa, Kansas, Maine, Massachusetts, Nebraska, Nevada, North Dakota, Pennsylvania, Rhode Island, Tennessee.

THE BURCHARD CUP

In 1912 the Honorable Roswell B. Burchard presented to the college a handsome silver cup to be used as a fraternity scholarship trophy. Each year the fraternity or other organized group of students whose average scholarship grade stands highest, wins the honor of having its name inscribed on the cup. When any fraternity has achieved this distinction for three consecutive years, it thereby secures permanent ownership of the cup. The cup is now in the possession of Phi Epsilon Pi.

Honors Awarded Commencement Day, June 30, 1919

FINAL HONORS FOR FOUR YEARS

HIGH HONORS

Daniel Olney Cargill

Priscilla DaCosta Smith

HONORS

Wayland McColley Burgess

Albert Angell Thornton

SENIOR HONORS

Edward Leroy Carpenter

Daniel Olney Cargill

Ruhamah Robinson Nichols

Philip Martin Carpenter

JUNIOR HONORS

Whitney Eastman Greene

Elizabeth Stillman

Frederic Robinson Briggs

SOPHOMORE HONORS

Joseph Edward O'Neill

Charles Howard Wales

Harold James Hall Baker

Pasquale Martelli

Joseph Wallace Peckham

FRESHMAN HONORS

Irving Lester Churchill

Helen Louise Taber

Harold Edward Martin

Angelo Mario Gencarello

Edwin Harold Coker

John Philip Snyder

Wallace Irving Pope

Arthur Herman Fischer

Edward Louis Godfrey

Joseph Bernard Byrnes

Mary Gladys Tew

Helen Stewart Fessenden

Degrees Conferred in 1919

Bachelor of Science

Wayland McColley Burgess

Daniel Olney Cargill

Edward Leroy Carpenter

Philip Martin Carpenter

Michael Vincent Creedon

Charles Davies Dalzell

John Joseph Dowling

George Henry Fairbanks

Edward Henry Gamble

Anna Peckham Gardner

Herman Battey Harrington

Charles Tew Hildreth

Arthur Tucker Holley

Merrilla Althea Irons

Leslie Arthur Keegan

Helen Wells Kinney

Howard Earle Marx

James Albert Mitchell

Ruth Goodwin Murray

Ruhamah Robinson Nichols

Charles Francis O'Brien

Thurston Waldemar Peterson

Florence Louisa Shippee

Priscilla DaCosta Smith

Leander Burnside Spencer, Jr.

Charles McManus Sullivan

Albert Angell Thornton

James Russell Walsh

George Lincoln Waugh

Lester Earl Wells

Margera Lenore Young

Students

Graduates

Bridge, Chester Gorden (B. A., Wesleyan, 1919).....	Kingston
Haag, J. Roy (B. S., Penn. State, 1918).....	Kingston
Mather, William (B. S., Mass. A. C., 1919).....	Kingston
Rodman, Samuel Lyman (B. S., R. I. S. C., 1917).....	Peace Dale
Tibbetts, Helena (B. S., Simmons College, 1918).....	Kingston

Seniors.

Baker, Louise, Home Econ.....	Pawtucket
Beasley, Dorald Dewey, Chem. Eng.....	Woonsocket
Biggs, Francis Lincoln, Mech. Eng.....	Providence
Bogosian, Harry Der, Civil Eng.....	Providence
Briggs, Frederic Robinson, Agr.....	Manchester, Conn.
Call, Roy Porter, Appl. Sci.....	Lynn, Mass.
Campbell, Emily Catherine, Home Econ.....	Newport
Caplan, Israel, Appl. Sci.....	Providence
Carnie, William Brown, Elec. Eng.....	Woonsocket
Clarke, Horace Wilbur, Mech. Eng.....	Providence
Cohen, Samuel Harry, Elec. Eng.....	Conimicut
Cruikshank, John William, Civ. Eng.....	Providence
Dawson, William, Civil Eng.....	Methuen, Mass.
Edwards, Mildred Elizabeth, Home Econ.....	Kingston
Fearn, George Andrew, Appl. Sci.....	Providence
Fleck, George Howard, Elec. Eng.....	Providence
Greene, Whitney Eastman, Mech. Eng.....	Kingston
Greenhalgh, Frank Elmer, Civ. Eng.....	Chepachet
Haslam, Arthur Edmond, Agr.....	Providence
Holley, Charles Potter, Mech. Eng.....	Kingston
Holmes, John Foster, Agr.....	Needham, Mass.
Hudson, Albert Sprague, Agr.....	Harris
Knott, James Edward, Agr.....	Jamaica Plain, Mass.
Kwasha, Leonard James, Chem. Eng.....	Providence
Luther, George Edward, Appl. Sci.....	Pawtucket
Malloy, George Joseph, Mech. Eng.....	North Easton, Mass.
Martell, Numan Allen, Elec. Eng.....	North Attleboro, Mass.
Mason, Charles Everett, Agr.....	Bristol
Murphy, Maurice Vincent, Mech. Eng.....	Brockton, Mass.
Northup, Kenneth LeRoy, Elec. Eng.....	Kingston
Peterson, Esther Wilhelmina, Home Econ.....	Westerly
Pihl, Roland Taylor, Mech. Eng.....	Pawtucket

Seabury, Douglas Beveridge, Agr.	Tiverton
Sisson, Albert Peckham, Agr.	Little Compton
Spink, Herbert Elmer, Civil Eng.	Davisville
Springer, Franklin Hoxsie, Appl. Sci.	Providence
Stillman, Elizabeth, Home Econ.	Westerly
Thackray, Elsie Law, Home Econ.	Pawtucket
Tweedell, William Theodore, Agr.	Pawtuxet
Whitford, Ada Elizabeth, Home Econ.	Wakefield
Whitford, Amy Ann, Home Econ.	Wakefield
Wilbourn, Vernon James, Appl. Sci.	Providence
Wilder, Harold Kenneth, Chem. Eng.	North Leominster, Mass.
Wittman, Victor Simon, Agr.	Providence

Juniors

Anderson, Flora Mcpherson, Home Econ.	Newport
Baacke, Henry Frederick, Appl. Sci.	Arlington
Baker, Harold James Hall, Agr.	Westerly
Brierley, Ralph Ernest, Chem. Eng.	Kingston
Brightman, Francis Pierce, Elec. Eng.	Hopkinton
Butler, Rose Alicia, Education.	Newport
Campbell, Mary Catherine, Home Econ.	Providence
Carr, Rose Mary, Appl. Sci.	Providence
Clarke, Arthur Lincoln, Agr.	Kingston
Condon, John Jerome, Chem. Eng.	Bristol
Connolly, Bernard Ambrose, Elec. Eng.	Brockton, Mass.
Copeland, Everett Adams, Elec. Eng.	Edgewood
Damon, Louise Elmore, Home Econ.	Kingston
Daneker, John Lachlan, Mech. Eng.	Providence
Davis, Elizabeth Edith, Home Econ.	Providence
Deery, Edwin Marshall, Agr.	Boston, Mass.
Eastwood, Edmund Cecil, Agr.	Providence
Fritz, Carl Edwin, Chem. Eng.	Providence
Gerstle, Gladys Darling, Home Econ.	Woonsocket
Grossman, Gertrude, Education.	Providence
Haag, Ruth Watts, Home Econ.	Kingston
Holley, Albert Henry, Chem. Eng.	Providence
Kohlberg, Esther Lucile, Home Econ.	Providence
Kohlberg, Rudolph Horton, Agr.	Providence
Maloney, John Joseph, Elec. Eng.	Pawtucket
Martelli, Pasquale, Civil Eng.	Essex, Conn.
McKee, Samuel Allen, Mech. Eng.	Woonsocket
Messerlian, Leon John, Chem. Eng.	Providence
Moore, Walter Webster, Agr.	Providence
O'Brien, James, Appl. Sci.	Woonsocket
O'Connell, Howard Joseph, Agr.	Providence
O'Neill, Joseph Edward, Civil Eng.	Brockton, Mass.
Palmer, Earl Geer, Elec. Eng.	Hope Valley

Peckham, Joseph Wallace, Elec. Eng.	Aquidneck
Pezzullo, Rocco, Appl. Sci.	Providence
Records, Lawrence Austin, Agr.	Brockton, Mass.
Sheehan, Irene May, Home Econ.	Central Falls
Sherman, Isaac Thornton, Agr.	Newport
Smith, Howard Bucklin, Appl. Sci.	Providence
Smith, Waldo Albert, Agr.	Slocums
Stillman, Louis, Elec. Eng.	Brooklyn, N. Y.
Sweetland, Sherburne Pride, Elec. Eng.	Rumford
Taft, Richard Christie, Mech. Eng.	Brockton, Mass.
Torgan, Nathan, Jr., Elec. Eng.	Providence
Tuzio, Arthur Joseph, Civil Eng.	Providence
Veneziale, Anthony, Civil Eng.	Providence
Wales, Charles Howard, Mech. Eng.	Haverhill, Mass.
Wiley, John Douglass, Agr.	Pawtucket
Woodbury, Kenneth James, Agr.	Providence
Zerbarini, Angelo Joseph, Elec. Eng.	Westerly

Sophomores

Adams, Grace Louise, Appl. Sci.	East Providence
Allen, Alvan Jason, Appl. Sci.	Providence
Anderson, Robert Wilcox, Elec. Eng.	Pawtucket
Antulonis, William Joseph, Civil Eng.	Bridgewater, Mass.
Barr, Edward Harris, Elec. Eng.	Central Falls
Barton, Alfred Carr, Jr., Chem. Eng.	Warren
Benjamin, Alfred Gould, Elec. Eng.	East Greenwich
Bloxham, Harold Carlton, Chem. Eng.	Pawtucket
Brown, Robert, Chem. Eng.	Providence
Brownell, Charles DeWolf, Mech. Eng.	Bristol
Byrnes, Joseph Bernard, Civil Eng.	Providence
Carlton, Marshall Gilbert, Agr.	East Providence
Casey, Richard Grant, Mech. Eng.	Bridgewater, Mass.
Churchill, Irving Lester, Appl. Sci.	Kingston
Coker, Edwin Harold, Mech. Eng.	Providence
Corr, Elizabeth Eloise, Home Econ.	East Greenwich
Davis, George Hazen, Mech. Eng.	Fall River, Mass.
Dean, Reginald Langworthy, Elec. Eng.	Westerly
Deuchar, Harry, Civil Eng.	Brockton, Mass.
Donegan, John Martin, Civil Eng.	Providence
Donnelly, Austin Joseph, Elec. Eng.	Providence
Earle, Marsden Perry, Appl. Sci.	Cranston
Ellis, Lester Joseph, Civil Eng.	Brockton, Mass.
Farnham, Raymond Ellsworth, Mech. Eng.	Providence
Fessenden, Helen Stewart, Home Econ.	Phenix
Ford, Willard Harding, Civil Eng.	Avon, Mass.
Gardiner, Milton Warren, Civil Eng.	Saylesville
Gardner, Charles Sydney, Elec. Eng.	Brockton, Mass.
Gencarello, Angelo Mario, Mech. Eng.	Westerly

Gillis, Watson Clarence, Mech. Eng.	Providence
Godfrey, Edward Louis, Civ. Eng.	Providence
Greene, James Francis, Elec. Eng.	Woonsocket
Hammarlund, Arthur Norman, Appl. Sci.	East Providence
Hammett, Betty Westall, Home Econ.	Newport
Harrington, Gordon Leslie, Mech. Eng.	Woodville
Harrington, Helen Priscilla, Home Econ.	Greene
Harrington, Ralph Eldon, Mech. Eng.	Providence
Hastings, Vinal Norberg, Chem. Eng.	Dorchester, Mass.
Haupt, Charlotte May, Home Econ.	Providence
Hawes, Russell Cheney, Agr.	Rumford
Hobbs, Howard Alfred, Appl. Sci.	East Providence
Holburn, Albert Edward, Appl. Sci.	Pawtucket
Holden, James Hamer, Appl. Sci.	Hartford, Conn.
Howarth, Albert Alex., Mech. Eng.	Providence
Howland, John Calder, Chem. Eng.	Warren
Hoxsie, Ruby Arden, Home Econ.	Canonchet
Hughes, Bertha Isabelle, Home Econ.	Providence
Ingraham, George Ellery, Chem. Eng.	Bristol
Kinder, Joseph Church, Mech. Eng.	Bristol
Kinne, Norma Doris, Home Econ.	East Greenwich
Lafleur, Leo Henry, Agr.	Warren
LaPerche, Raymond Charles, Chem. Eng.	Providence
Levine, Sidney Joseph, Appl. Sci.	Providence
Levy, Samuel Joseph, Civ. Eng.	Providence
Lowry, Moses Christy, Appl. Sci.	Westerly
Lucey, Richard Alphonsus, Mech. Eng. ...	Brockton, Mass.
Manning, Atwell Mowry, Mech. Eng.	Riverside
Marshall, Clarence Fuller, Elect. Eng.	Providence
Martin, Harold Edward, Mech. Eng.	Georgiaville
Moorhouse, George Sydney Redvers, Agr.	Westerly
Morehouse, Wade Allen, Mech. Eng.	Providence
Mosher, Clifford Hollis, Mech. Eng.	Auburn
Murray, Dorothy Louise, Home Econ.	Saylesville
Niles, Owen Albert, Elec. Eng.	Wyoming
Nordquist, Clarence Edward, Mech. Eng.	Providence
Nye, John Fremont, Elec. Eng.	Westerly
Pastorini, Louis Eugene, Civ. Eng.	Brockton, Mass.
Pope, Wallace Irving, Agr.	Providence
Potter, Grant Hamblett, Civil Eng.	Providence
Railton, William Aloysius, Appl. Sci.	Valley Falls
Reed, John Hamilton, Agr.	Providence
Regester, Isabel Allen, Home Econ.	Providence
Reynolds, Frederick Conrad, Eng.	Edgewood
Rondo, Anthony, Mech. Eng.	Providence
Rossi, Albert Michael, Chem. Eng.	Providence
Scorpio, Angelo, Appl. Sci.	Providence
Simas, William Harvey, Appl. Sci.	East Providence

Smith, Isaac Willard, Appl. Sci.	West Barrington
Smith, Lillian Gladys, Home Econ.	Providence
Smith, Martha Stedman, Home Econ.	Newport
Tabor, Helen Louise, Home Econ.	Jamestown
Tew, Mary Gladys, Home Econ.	Phenix
Titchener, Frederick Herman, Agr.	Providence
Totman, Frank Howard, Appl. Sci.	Providence
Turner, Everett Edgar, Civ. Eng.	Brockton, Mass.
Turner, Frederick Allen, Mech. Eng.	Riverside
Wade, Senior, Agr.	Woonsocket
Watson, Alma Linwood Barlow, Home Econ.	Providence
Whitaker, Harold Earl, Agr.	East Providence
Wood, George William, Civil Eng.	Providence
Yarvots, Evarts, Elec. Eng.	New London, Conn.

Freshmen

Abbott, Ruth Madeline, Home Econ.	Providence
Adams, Arlo Gordon, Eng.	Central Falls
Adams, Harold Earl, Eng.	Providence
Adams, Rolf Grimstat, Eng.	East Providence
Allard, Edward Reinhold, Eng.	Providence
Anderson, Arvid Simmons, Eng.	Swampscott, Mass.
Anderson, Elmer Webster, Eng.	Pontiac
Andrews, Elvin Joseph, Eng.	Newport
Arnold, Alzada, Home Econ.	Providence
Bailey, Abner Harris, Appl. Sci.	Bristol
Barber, Marion Lucile, Home Econ.	Phenix
Belcher, Ronald Saunders, Eng.	Lakewood
Bergman, Merrill Morton, Eng.	New London, Conn.
Blake, Charles Raymond, Eng.	Westerly
Bowe, Ella Amanda Louise, Home Econ.	Providence
Burdick, Harold Aiken, Eng.	Forest Hills, N. Y.
Butterworth, Walton Booth, Appl. Sci.	Arkwright
Cargill, Miriam Ayer, Appl. Sci.	Valley Falls
Carulo, Armando, Eng.	Providence
Chandler, George Alfred, Eng.	Providence
Clark, John Lathrop, Appl. Sci.	Providence
Coleman, Harry Vincent, Appl. Sci.	Pawtucket
Conefrey, Joseph Barlow, Eng.	Brockton, Mass.
Conefrey, Walter Thomas, Eng.	Brockton, Mass.
Connolly, Fred Joseph, Eng.	Brockton, Mass.
Cook, Marion Louise, Home Econ.	Glendale
Cressy, George Henry, Eng.	Providence
Datson, Doris Beatrice, Home Econ.	Westerly
DeMarco, Anthony, Eng.	Providence
Dickinson, George, Jr., Eng.	Providence
Dimitri, Vincent, Eng.	Providence

Dolbey, James McAlley, Agr.	Mansfield, Mass.
Donkersley, Albert Burton, Eng.	Providence
Dougherty, Francis Edward, Eng.	Providence
Dunn, Edward Patrick, Appl. Sci.	Newport
Edwards, Earl Sylvester, Eng.	Providence
Edwards, Theodoric Bland, Eng.	Elmhurst, N. Y.
Eldredge, Raymond Atwood, Agr.	Chatham, Mass.
Ellsworth, Leonard Knight, Eng.	Edgewood
Evans, Julia, Home Econ.	West Wrentham, Mass.
Fager, Harold Orvar, Agr.	Rumford
Faver, Harry Ernest, Eng.	Newark, N. J.
Fisher, Lloyd Herbert, Eng.	Providence
Fletcher, Leslie Seekell, Appl. Sci.	Providence
Fort, William Sutherland, Eng.	Woonsocket
French, Ralph Lawrence, Eng.	Plainville, Mass.
Ganz, Arthur William, Eng.	Providence
Geary, Timothy Edward, Eng.	Westerly
Gee, Harold, Eng.	Ashton
Geisler, Herbert Arthur, Eng.	Bristol
Godschall, Milton Griffith, Eng.	Woonsocket
Goff, Albert Frederick, Eng.	Providence
Govoni, Alfred Louis, Eng.	Sandwich, Mass.
Hanley, James Richard, Eng.	Providence
Hawkins, William Raymond, Appl. Sci.	Providence
Hirtle, Roy Tremain, Eng.	Pawtucket
Holliday, William Merrick, Jr., Eng.	Pawtucket
Howe, Vaslet Little, Eng.	Providence
Hudson, Raymond Arthur, Eng.	Woonsocket
Johnson, Eskiell Conrad, Eng.	Crompton
Kayarian, Sarkis Sogoman, Eng.	Woonsocket
Keith, Clifford Woodward, Agr.	Providence
Kelley, Bertrand Warren, Jr., Appl. Sci.	East Providence
Kenneth, Lloyd Wilcox, Agr.	Westerly
Kern, Harold Ferdinand, Eng.	Providence
Kinsey, Kenneth Lea, Eng.	Providence
Kulasewski, Bolus Alexander, Eng.	Crompton
LaBree, Lawrence Winthrop, Eng.	Providence
Lavoie, Urbain Benjamin, Eng.	East Providence
Leighton, Mary Belding, Home Econ.	Kingston
Lewis, Helen Frances, Home Econ.	Pawtucket
Little, Henry Raymond, Eng.	Providence
Little, Walter Bradford, Eng.	Providence
Marley, Arthur Earle, Eng.	Providence
Martin, Emily Madeline, Home Econ.	Newport
Mattera, Vincent, Eng.	Providence
Matteson, Ray Carroll, Eng.	Anthony
McCarthy, John William, Agr.	Brockton, Mass.
McCaughey, Everett Vincent, Agr.	Lonsdale

McCauley, Joseph Francis, Eng.	Providence
McCoid, Florence Irene, Home Econ.	Providence
McDonough, Martin Clifford, Eng.	Warren
McKenzie, Frances Henrietta, Home Econ.	Providence
McLaughlin, Joseph Dominick, Eng.	Providence
Michie, Harry Richard, Eng.	Providence
Midgeley, David Alan, Appl. Sci.	Arlington
Monsen, Alice Helen, Home Econ.	Newport
Morrissey, Teresa Mary, Home Econ.	Bristol
Mowry, Churchill Herbert, Eng.	Providence
Mowry, Stanley Howard, Agr.	Woonsocket
Neill, Everett Cunningham, Eng.	Rumford
Norris, Thomas Ellsworth, Appl. Sci.	Brockton, Mass.
O'Brien, John Edward, Eng.	Providence
Olsen, Richard Arthur, Eng.	Providence
Parker, George Lee, Agr.	Oakland
Peckham, Raymond Maxwell, Agr.	Little Compton
Perry, Roy, Eng.	North Attleboro, Mass.
Piacitelli, Joseph Albert, Eng.	Providence
Pike, Charles Amos, Eng.	East Greenwich
Porteus, Thomas Britton, Eng.	Astoria, N. Y.
Rhodes, Frederick Miller, Agr.	Providence
Rhodes, Lyndon Russell, Agr.	Edgewood
Ritzau, Walter John, Agr.	Providence
Robinson, Martha Weaver, Home Econ.	Providence
Rooney, Allen James, Agr.	Providence
Rossi, Arthur Paul, Eng.	Providence
Rowell, Amos Farnsworth, Appl. Sci.	Groveland, Mass.
Salisbury, Richard Norman, Eng.	Providence
Salzillo, John, Eng.	Providence
Schultz, Alfred Oscar, Eng.	Newport
Shaw, James Gannon, Agr.	East Providence
Shedd, Elizabeth Edson, Home Econ.	East Providence
Siegel, Raymond Earl, Agr.	Arlington
Simonini, Peter Leo, Agr.	Providence
Smith, Francis Rowland Farr, Eng.	Providence
Smith, Maurice Richmond, Eng.	Woonsocket
Smith, Ruth Hoffman, Home Econ.	Elmwood
Soule, William Nelson, Appl. Sci.	Pawtucket
Spencer, Lee Valley, Eng.	Phenix
Sprague, Arthur Crawford, Eng.	Block Island
Staf, Ella Hulda, Home Econ.	Elmwood
Staf, Lawrence Herman, Agr.	Providence
Sutton, Norman LeRoy, Appl. Sci.	Paterson, N. J.
Swansey, George Francis, Eng.	Sandwich, Mass
Swanson, Arthur Edward, Eng.	Providence
Tabor, Caroline Frances, Home Econ.	Jamestown
Truesdale, Carl Morrison, Appl. Sci.	Lonsdale

Vient, Louis Francis, Eng.	Providence
Walsh, Philip Leo, Eng.	Fall River, Mass.
Warden, Harold Colville, Eng.	Adamsville
Webster, Andrew Nelson, Appl. Sci.	Wethersfield, Conn.
Wells, Nathaniel Dewey, Eng.	Ashaway
Westcott, Alfred Johnson, Eng.	Pawtucket
Winter, Doris Parker, Home Econ.	Mansfield, Mass.
Winter, Martha Bruce, Home Econ.	Mansfield, Mass.
Witham, Frank Raymond, Agr.	Riverside
Wood, Robert Palmer, Eng.	Riverpoint
Woodhouse, Edwin Clarence, Eng.	Providence
Woolley, John Edward, Eng.	Woonsocket
Wright, John Leslie, Eng.	North Attleboro, Mass.
Wronwick, Charles Anthony, Eng.	Brooklyn, N. Y.

Irregulars

Clarke, Dorothy Miller	Kingston
Sullivan, Edward Joseph	Providence
Swahn, John Axel	Woonsocket

Two-Year Agriculture

Almy, Earle Vaughn	Edgewood
Coggeshall, Chester Peabody	Newport
Collins, Delbert Burden	Davisville
Fletcher, William Ingersoll	Lakewood
Latham, Herbert Bradford	Rumford
Nauman, Albert Emil	Greenville
Phillips, Charles Martin	Providence
Potter, Alfonso Frank	Pawtucket
Rafferty, Martin Daniel	Providence
Rooney, Charles Richard	Woonsocket
Steere, Wendall Winsor	Providence

Summary

Graduates	5
Seniors	44
Juniors	50
Sophomores	91
Freshmen	141
Irregular	3
Total	334
Two-Year	11
Total	345

Graduates

1894

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD.....	Agr.	Professor of Agronomy and Dean of Agricultural Dept., R. I. S. C.
M. Agr. R. I. State College, 1916. Kingston.		
AMMONDS, GEORGE CLARENCE.....	Mech.	Railroad Postal Clerk, on N. Y., N. H. & H. R. R. Co.
54 Eliot St., Boston, Mass.		
ARNOLD, CHAPIN TRAFFORD.....	Agr.	Electrical Contractor, Office 26 Custom House St., Providence.
Box 57, Providence.		
BURLINGAME, GEO. WASHINGTON....	Agr.	Farmer and Teacher.
R. F. D. No. 2, Box 56, North Scituate.		
CLARK, HELEN MAY (MRS. WM. F. B. LEAVITT), B. L., Smith Col- lege, 1899. Essex Fells, New Jersey.		At home.
KNOWLES, JOHN FRANKLIN.....	Mech.	With The Bristow Bros. & Knowles Corporation.
Narragansett Pier.		
*MADISON, WARREN BROWN.....	Agr.	
MATHEWSON, ERNEST HOXSIE.....	Mech.	Crop Technologist in Tobacco, U. S. Department of Agricul- ture.
Ph. B., Brown University, 1896. Reidsville, North Carolina.		
PECKHAM, REUBEN WALLACE.....	Agr.	Y. M. C. A. Secretary, 41 Rue de Provence, Paris, France.
RATHBUN, WILLIAM SHERMAN.....	Agr.	City Editor, Holyoke Evening Telegram.
Box 90, R. F. D. No. 2, Holyoke, Mass.		
RODMAN, GEORGE ALBERT.....	Mech.	General Supervisor, Bridges and Buildings, Union Station, N. Y., N. H. & H. R. R. Co.
New Haven, Conn.		
SARGENT, CHARLES LAWRENCE.....	Agr.	Technical Director, Murphy Var- nish Co.
Ph. D., University of Pennsylvania, 1900. 54 Shepard Ave., Newark, N. J.		
SLOCUM, SAMUEL WATSON.....	Agr.	Instructor of Woodwork, West- erly Schools.
60 Summer St., Westerly.		
SPEARS, JOHN BARDEN.....	Agr.	Rural Letter Carrier.
Foster Centre.		

It is earnestly desired that graduates inform the college office of any permanent change of address.

* Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SWEET, STEPHEN ADELBERT..... Slocum.	Agr.	Farmer.
TUCKER, GEORGE MASON..... Ph. D. Göttingen, 1899. College Park, Md.	Agr.	Dairy Department, Maryland State College.
WILBER, ROBERT ARTHUR..... East Greenwich.	Mech.	Carriage-maker and blacksmith.

1895

*ALBRO LESTER FRANKLIN.....	Agr.	
BURDICK, HOWLAND..... Kingston.	Agr.	Assistant Professor of Dairying, R. I. S. C.
CLARKE, CHARLES SHERMAN..... 22 Wood St., Bristol.	Mech.	Marine Engineer.
ELDRED, MABEL DEWITT..... Kingston.		Instructor in Art.
HAMMOND, JOHN EDWARD..... Jamestown.	Agr.	Farmer.
OATLEY, LINCOLN NATHAN..... Wakefield.	Mech.	Contractor and builder; Coal Dealer.
SCOTT, ARTHUR CURTIS..... Ph. D., Univ. of Wisconsin, 1902. 4114 Cedar Springs Ave., Dallas, Texas.	Mech.	Consulting Engineer.
TEFFT, JESSE COTTRELL..... Jamestown.	Mech.	Storekeeper.
WINSOR, BYRON EDGAR..... Coventry.	Mech.	R. F. D., Mail Carrier.

1896

BROWN, MAY (MRS. CHARLES A. WHITE). Narragansett Pier.		At home.
GREENMAN, ADELAIDE MARIA (MRS. R. WALLACE PECKHAM)..... Graduate, School of Expression, 1901. France.		At home.
KENYON, ALBERT LEWIS..... 240 Camp St., Providence.	Mech.	Printer, with U. S. Finishing Co.
MOORE, NATHAN LEWIS CASS..... Harrington Park, New Jersey.	Agr.	Fruit-grower.
TABOR, EDGAR FRANCIS..... 39 Everett St., Southbridge, Mass.	Mech.	Foreman Printer, The Southbridge Printing Co.
*WILLIAMS, JAMES EMERSON.....	Agr.	

1897

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS.....	Sci.	With Underwood Typewriter Co., 74 Franklin St., Boston, Mass.
CASE, HERBERT EDWARDS BROWN..	Mech.	Secretary, Amer. Board of Com- missioners for Foreign Missions.
Ph. B., Brown University, 1900. Graduate, Hartford Theological Seminary, 1904. 14 Beacon St., Boston, Mass.		
GRINNELL, ARCHIE FRANKLIN.....	Mech.	Chief Draftsman, United Wire and Supply Co.
104 Potter St., Auburn.		
HANSON, GERTRUDE MAIE. (MRS. FREDERICK D. KNAPP).....	Sci.	At home.
Stonington, Conn.		
HOXSIE, BESSIE BAILEY (MRS. E. F. RUECKERT).....	Sci.	At home.
98 Melrose St., Providence.		
KENYON, ALBERT PRENTICE.....	Mech.	Clerk, C. B. Cottrell & Sons Co.
23 Courtland St., Westerly.		
KENYON, CHARLES FRANKLIN.....	Mech.	Engineer.
Shannock.		
LARKIN, JESSIE LOUISE.....	Sci.	Genealogist.
98 Beach St., Westerly.		
*MARSLAND, LOUIS HERBERT.....	Mech.	
TEFFT, ELIZA ALICE.....	Sci.	Teacher.
East Greenwich.		
THOMAS, IRVING.....	Mech.	Farmer and Mill Operative.
Lafayette.		

1898

ARNOLD, SARAH ESTELLE (MRS. R. O. BROOKS).....	Sci.	At home.
975 East 18th St., Brooklyn, N. Y.		
BARBER, GEORGE WASHINGTON.....	Agr.	Rancher.
Glendora, Cal.		
CARGILL, EDNA MARIA (MRS. LESTER H. BROWN).....	Sci.	At home.
R. F. D. No. 2, Box 96, Valley Falls.		
CASE, JOHN PETER.....	Agr.	Manager Western Office, Brown Hoisting Machinery Company.
251 Monadnock Bldg., San Francisco, Cal.		
CLARKE, WILLIAM CASE.....	Sci.	General Manager, Narragansett Pier Elec. Light and Power Co.
17 Dexterdale Road, Providence.		
CONGDON, HENRY AUGUSTUS.....	Mech.	Farmer.
Kingston.		
FLAGG, MARTHA REBECCA.....	Sci.	At home.
Abbott Run.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HARLEY, WILLIAM FERGUSON.....	Agr.	Buyer, with Callender, McAuslan & Troup Co., Providence.
23 Summit Ave., Providence.		
TURNER, HARRIETTE FLORENCE (MRS. GEO. M. TUCKER).....	Sci.	At home.
Graduate, Drexel Institute, 1900. Maryland.		
WILSON, GRACE ELLEN (MRS. W. F. HARLEY).....	Sci.	At home.
23 Summit Ave., Providence.		

1899

BOSWORTH, ALFRED WILLSON.....	Sci.	Director of the Research Laboratories, Boston Floating Hospital; Research Fellow, Harvard Medical School.
A. M., Harvard University, 1913. 36 Avalon Road, West Roxbury, Mass.		
BROOKS, RALPH ORDWAY.....	Sci.	Consulting Chemist, Bacteriologist, Microscopist, Food-Inspection Expert, 191 Franklin St., New York City.
975 East 18th St., Brooklyn, N. Y.		
GEORGE, LILLIAN MABELLE.....	Sci.	In charge of Continuations, Oregon Agricultural College Library.
A. B., Univ. Illinois, 1904. Graduate, N. Y. State Library School, 1910. 135 N. 26th St., Corvallis, Ore.		
HARVEY, MILDRED WAYNE (MRS. WM. H. BLISS).....	Sci.	At home.
390 Wadsworth Ave., New York City.		
KENYON, BLYDON ELLERY.....	Agr.	Asst. Supt. of Construction, Stone & Webster Eng. Corporation.
Dover, New Jersey.		
KNOWLES, CARROLL.....	Mech.	Chief Tool Designer, Brown & Sharpe Mfg. Co.
77 Chiswick Road, Edgewood.		
KNOWLES, HARRY.....	Sci.	Advertising, Atlas Portland Cement Co.
Ph. B., Brown University, 1906. 113 Ft. Greene Place, Brooklyn, N. Y.		
LADD, MERRILL AUGUSTUS.....	Mech.	Proprietor, Stinson Electric Co., 108 West Bay St.
Jacksonville, Fla.		
MORRISON, CLIFFORD BREWSTER.....	Sci.	Assistant Chemist, Conn. State Experiment Station.
New Haven, Conn.		
OWEN, WILLIAM FRAZIER.....	Mech.	Engineering Department, General Electric Co.
Schenectady, N. Y.		
PAYNE, EBENEZER.....	Sci.	Orange Grower.
M. D., Univ. Michigan, 1904. Glendora, Cal.		
PHILLIPS, WALTER CLARKE.....	Mech.	Instructor in English, Brown University.
Ph. B., Brown University, 1902. A. M., Brown University, 1903. Providence.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
REYNOLDS, ROBERT SPINK Room 314, Gen. Office Bldg., New Haven, Conn.	Mech.	Assistant Engineer, Bridge Dept., N. Y., N. H. & N. R. Co.
RICE, MINNIE ELIZABETH (MRS. ROBERT J. SHERMAN) Exeter Hill.	Sci.	At home.
SHERMAN, ABBIE GERTRUDE (MRS. BENJAMIN BARTON) 56 Pavilion Ave., Providence.	Sci.	At home.
*SHERMAN, GEORGE ALBERT	Mech.	
THOMPSON, SALLY RODMAN (MRS. LEWIS BALCH, JR.) Wakefield.	Sci.	At home.

1900

BRIGHTMAN, HENRY MAXSON 200 Broadway, New York.	Mech.	In business.
CROSS, CHARLES CLARK 316 Schantz Ave., Troy, Ohio.	Mech.	President and General Manager, The Troy Body Co., Troy, Ohio.
ELDRED, JOHN RALEIGH Kingston.	Mech.	Instructor in Mechanical Engineer- ing, R. I. S. C.
FISON, GERTRUDE SARAH (MRS. JOHN W. ROOT) 26 Main St. Park, Malden 48, Mass.	Sci.	At home.
FRY, JOHN JOSEPH Greenwich, Conn.	Sci.	Supervising Principal, Byram School and Hamilton Ave. School.
GODDARD, EDITH (MRS. LAWRENCE B. REED) 20 North St., Plymouth, Mass.	Sci.	At home.
KENYON, AMOS LANGWORTHY Wood River Junction.	Agr.	Dairyman.
MUNRO, ARTHUR EARLE Ph. B., Brown University, 1902. 41 George St., Providence.	Sci.	Attorney-at-law, 49 Westminster St.
SOULE, RALPH NELSON Racine, Wisconsin.	Sci.	Mgr., Gen. Service Dept., Mitchell Motor Co., 842 Main St., Racine.
STEERE, ANTHONY ENOCH Room 54, Triangle Bldg., Rochester, N. Y.	Mech.	Resident Civil Engineer, New York State Canals.
STILLMAN, LENORA ESTELLE 1046 Greene Ave., Brooklyn, N. Y.	Sci.	Teacher.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
TUCKER, BERTHA DOUGLASS.....	Sci.	Teacher of Machine Operating
109 Queensbury St., Boston, Mass.		Dressmaking, Trade School for Girls.
WHEELER, CHARLES NOYES.....	Sci.	Clerk, Wm. H. Haskell Manufac-
21 Cedar St., Pawtucket.		turing Co.
WILSON, JOSEPH ROBERT.....	Mech.	Surveyor.
184 Grace St., Auburn.		

1901

BRAYTON, CHARLES ANDREW.....	Agr.	Farmer.
Hope, R. F. D.		
BRIGGS, NELLIE ALBERTINE.....	Sci.	Stenographer, R. I. Hospital Trust
Providence.		Co.
BURGESS, CHARLES STUART.....	Mech.	Draughtsman, Brown & Sharpe
264 Sayles St., Providence.		Mfg. Co.
CLARNER, LOUIS GEORGE KARL, JR....	Sci.	Insurance Engineer, N. H. Bureau
19 Pearl St., Concord, N. H.		of Underwriters.
DAWLEY, EDNA ETHEL		
(MRS. GEORGE W. WHITFORD).....	Sci.	At home.
West Kingston, R. F. D., Box 80.		
DENICO, ARTHUR ALBERTUS.....	Sci.	Telephone Engineer, with American
Ph. B., Brown University, 1904.		Telephone and Telegraph Co.
195 Broadway, New York City.		
*JAMES, RUTH HORTENSE		
(MRS. HERBERT E. ROUSE).....	Sci.	
SHERMAN, ANNA BROWN		
(MRS. JOSEPH R. WILSON).....	Sci.	At home.
184 Grace St., Auburn.		
SHERMAN, ELIZABETH AGNES.....	Sci.	Secretary to Research Chemist,
424 Mass. Ave., Boston, Mass.		Arthur D. Little, Inc., Boston.
SMITH, HOWARD DEXTER.....	Sci.	Instructor in Chemistry, Evening
A. M., Brown University, 1904.		School of Lowell Textile School;
Ph. D., Tufts College, 1906.		Chemist, Carleton & Hovey Co.
669 Westford St., Lowell, Mass.		
STEERE, ROWENA HOXIE.....	Sci.	At home.
102 Sassafras St., Providence.		
*WILBY, JOHN.....	Sci.	

1902

CLARKE, LATHAM.....	Chem.	Director, Instituto de Quimica
A. M., Brown University, 1903.		Industrial.
Ph. D., Harvard University, 1905.		
Montevideo, Uruguay.		
FERRY, OLIVER NEEDHAM.....	Mech.	Superintendent, Waterbury Tool
111 Coniston Ave., Waterbury, Conn.		Co.

NAME AND ADDRESS.

COURSE.

OCCUPATION.

MAXSON, RALPH NELSON.....	Chem.	Professor Inorganic Chemistry, State University.
Ph. D., Yale University, 1905.		
366 Transylvania Park, Lexington, Ky.		
PITKIN, ROBERT WILLIAM.....	Mech.	Farmer.
Rockville, Conn., R. F. D. No. 1.		

1903

BARBER, KATE GRACE (MRS. A. L. WINTON).....	Gen. Sci.	At home.
Ph. D., Yale University, 1906.		
Wilton, Conn.		
CONANT, WALTER AIKEN.....	Agr.	Dairying, The Conant and Clem- ent Farms, Hillsboro County.
Temple, N. H.		
GODDARD, WARREN, JR.....	Mech.	Instructor in Physics, Chemistry and Philosophy of Science, Ur- bana Univ. School.
Graduate, New Church Theological School, 1907.		
229 S. Walnut St., Urbana, Ohio.		
KEEFER, EDITH CECILIA.....	Biol.	Social Director for Nurses, Walter Reed Hospital.
Washington, D. C.		
KENT, RAYMOND WARREN.....	Chem.	Chemist, The Knight Tire & Rub- ber Co.
A. M., Harvard University, 1904.		
1237 Ridge Road, Canton, Ohio.		
TEFFT, ERNEST ALLEN.....	Elec. Eng.	Electrical Contractor, 87 West- minster St.
85 Larch St., Providence.		

1904

BALLOU, WILLARD ALGER.....	Biol.	Instructor in Mathematics, Pratt Institute.
B. S., Columbia University, 1913.		
M. A., Columbia University, 1915.		
335 Lafayette Ave., Brooklyn, N. Y.		
QUINN, MARY LOUISE.....	Biol.	Teacher of Science, B. M. C. Durfee High School.
213 Purchase St., Fall River, Mass.		
RODMAN, WALTER SHELDON....	Elec. Eng.	Professor of Electrical Engineer- ing, University of Virginia.
M. S., R. I. S. C., 1907.		
M. S., Mass. Inst. Tech., 1909.		
Box 222, University, Va.		

1905

CHAMPLIN, SARAH ELIZABETH (MRS. HAROLD L. FRIEND)....	Gen. Sci.	At home.
306 Smith St., Edgewood.		
DOW, VICTOR WELLS.....	High. Eng.	New England Manager, Amer. Bronze Corporation.
14 Sewall Woods Road, Melrose, Mass.		
GILMAN, JEAN.....	High. Eng.	Assistant to Director of Trade School, Hampton Institute.
Hampton, Va.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
*HARRALL, NELLIE ARMSTRONG (MRS. B. H. ARNOLD)	Gen. Sci.	
Graduate, Sargent School of Physical Education, 1909.		
1906		
ARNOLD, BENJAMIN HOWARD	Elec. Eng.	Asst. Chief Engineer, Fairbanks, Morse Co.
516 College St., Beloit, Wisconsin.		
*BERRY, WALLACE NOYES	Elec. Eng.	
ELKINS, MARION GRAHAM	Gen. Sci.	Teacher.
Ph. D., Yale University, 1912.		
10 Moody St., Amesbury, Mass.		
HARDING, LEE LAPLACE	High. Eng.	Asst. Manager Sales Tractor Dept., New Britain Machine Co.
52 Robbins Ave., New Britain, Conn.		
KEYES, FREDERICK GEORGE	Chem.	Director Research Laboratory, Physics and Chemistry, Mass. Inst. of Technology.
Sc. M., Brown University, 1907.		
Ph. D., Brown University, 1909.		
12 Mellen St., Cambridge, Mass.		
NICHOLS, HOWARD MARTIN	Elec. Eng.	Engineer, B. F. Sturtevant Co.
14 Clifford St., Readville, Mass.		
SISSON, CORA EDNA (MRS. BENJAMIN D. BUSH)	Gen. Sci.	At home.
M. S., Brown University, 1910.		
Lakewood, N. J.		
WILKINSON, ALBERT EDMUND	Agr.	County Agricultural Agent.
M. Agr., R. I. State College, 1916.		
May's Landing, N. J.		

1907

BARBER, ARTHUR HOUGHTON	Mech. Eng.	Inspector for Associated Factory Mutual Fire Insurance Cos., Boston, Mass.
East Greenwich.		
COGGINS, CALVIN LESTER	Elec. Eng.	Assistant Professor of Physics and Elec. Eng., R. I. S. C.
Kingston.		
FERRY, JAY RUSSELL	High. Eng.	
Warren.		
KELLOGG, DAVID RAYMOND	Chem.	Captain, Ordnance R. C., Inspec- tion Division.
Ph. D., Ohio State University, 1912.		
Albemarle Bldg., 24th and Broad- way, New York.		
KENDRICK, WINFIELD SMITH	Elec. Eng.	In charge Sales Lab. Products, General Electric Co.
115 Waverly Place, Schenectady, N. Y.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LAMOND, JOHN KENYON	Elec. Eng.	Director, Dept. Military Relief,
M. A., Yale University, 1908.		Penn.-Del. Div., American Red
Ph. D., Yale University, 1910.		Cross., 134 S. 16th St., Phila-
320 S. 11th St., Philadelphia, Pa.		delphia, Pa.
LEWIS, HARRY REYNOLDS	Agr.	Professor Poultry Husbandry, New
M. Agr. R. I. S. C., 1916.		Jersey State University; Poultry
1 Clifton Ave., New Brunswick, N. J.		Husbandman, New Jersey Agri-
		cultural Experiment Station.

*MACOMBER, MINER SANFORD	Chem.	
TUCKER, ETHEL ALDRICH		
(MRS. LITTLETON C. HAYDEN)	Gen. Sci.	At home.
28 Sadler Ave., Pittsfield, Mass.		

1908

DREW, JOSEPH DRAKE	Chem.	Coke Inspector, Tenn. Coal, Iron
Fairfield, Alabama.		R. R. Co.
FIELD, CLESSON HERBERT	Civ. Eng.	Contracting Engineer, Ferguson
C. E., Lehigh University, 1909.		Steel & Iron Co., Buffalo, N. Y.
272 Washington Highway,		
Snyder, N. Y.		
FISKE, HERBERT ANDREW	Elec. Eng.	Proprietor, H. A. Fiske Garage.
1800 Acushnet Ave.,		
New Bedford, Mass.		
GARDINER, ROBERT FRANKLIN	Chem.	Research Chemist, Bureau of Soils,
M. S., George Washington		U. S. Dept. of Agriculture.
University, 1914.		
Apt. 202, 1511-22nd St., N. W., Wash-		
ington, D. C.		
GORY, EDWARD ALLEN	Elec. Eng.	Electric Engineer, General Electric
5 City Hall Square, Lynn, Mass.		Co., Lynn, Mass.
KENYON, SUSAN ELNORA		
(MRS. FRED K. CRANDALL)	Biol.	At home.
Kingston.		
MITCHELL, CLOVIS WILLIAM	Civ. Eng.	Superintendent of Schools.
Greenville.		
ROSE, ORPHA LILLIE		
(MRS. HENRY A. CONGDON)	Gen. Sci.	Teacher.
Kingston.		
SHELDON, GEORGE WARE	Elec. Eng.	With Westinghouse Electric Co.
Wakefield.		
SHERMAN, MARY ALBRO		
(MRS. FRED M. MANLY)	Agr.	At home.
West Fairlee, Vt.		
SMITH, JOHN LEBROC	Elec. Eng.	Teacher of Mathematics, Crosby
A. M., Brown University, 1915.		High School.
41 Holmes Ave., Waterbury, Conn.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WHIPPLE, LUCIUS ALBERT..... 1142 Smith St., Providence.	Civ. Eng.	Superintendent, State Home and School.

1909

CARGILL, RHOBIE LUCELIA..... 57 Gordon Ave., Providence.	Appl. Sci.	Teacher of Science, Technical High School.
CRAIG, JAMES MCINTYRE..... Casilla Correo 23, Rosario de Sta. Fe, Argentine.	Agr.	Gardener and Merchant.
CRANDALL, FRED KENYON..... Kingston.	Agr.	Assistant, Agronomy Dept., Experiment Station, R. I. S. C.
FRENCH, HENRY FRANK..... 57 Mall St., West Lynn, Mass.	Elec. Eng.	Turbo-Generator Engineer, General Electric Co.
HOWE, ALBERT MENDEL..... 1 Rockland St., Brockton, Mass.	Elec. Eng.	Inspector, Bay State St. Ry. Co.
KNOWLES, WALTER..... Kingston.	Civ. Eng.	With Stone & Webster, 147 Milk St., Boston, Mass.
LEE, ALFRED ROGERS..... Decatur Heights, Landover, Md.	Agr.	Animal Husbandman, in Poultry Investigation, Bureau of Animal Industry, U. S. Dept. of Agriculture.
MORAN, WALTER JOHN..... R. F. D., Uncasville, Conn.	Civ. Eng.	With Groton Iron Works, Groton, Conn.
MOYER, LOUIS EARL..... Seneca Falls, N. Y.	Civ. Eng.	Civil Engineer, State of New York Commission of Highways.
ROCKWELL, RUBY BELL (MRS. JOHN O'LOUGHLIN)..... 10 Milford St., Binghamton, N. Y.	Chem.	At home.
SMITH, ELMER FRANCIS..... 331 Walnut St., Roselle Park, N J.	Elec. Eng.	Supt. of Public Schools.
TISDALE, HARRY ROBERT..... Mass. Inst. Technology, 1911. 58 Georgiana St., New London, Conn.	Chem.	Supt., Dye House, Brainerd & Armstrong, Silk M'f'rs.
TUCKER, ELLEN CAPRON..... Kingston.	Gen. Sci.	Primary Teacher, Peacedale.

1910

BURGESS, PAUL STEERE..... M. S., University of Illinois, 1911. Honolulu, Hawaii.	Chem. Eng.	Chief Chemist and Bacteriologist, with Hawaiian Sugar Planters' Association, Experiment Station.
CARPENTER, RANDOLPH HAYWOOD, El. Eng. 632 East 26th St., Brooklyn, N. Y.	El. Eng.	Sales Engineer, Nash Engineering Co., 40th St., New York City.
CUMMINGS, ROBT. WINTHROP, Mech. Eng. 92 Fountain St., Orange, Mass.	Mech. Eng.	Production Manager, Greenfield Tap & Die Corporation, Greenfield, Mass.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GOODALE, RALPH WALDO	Civ. Eng.	Civil Engineer, Real Estate Dept., N.Y., N. H. & H. R.R. Co.
55 Gilbert Ave., New Haven, Conn.		
HARDY, JOHN IRA	Gen. Sci.	Textile Chemist, Albany Felt Com- pany.
Ph. D., Univ. of Missouri, 1917. Albany, N. Y.		
HEATH, BERTHA MAY	Agr.	Bact. Dept., R. I. State College.
Kingston.		
KENYON, AMOS HARRIS	Elec. Eng.	Traffic Chief, American Tel. & Tel. Co.
131 Abbott St., Providence.		
LAMOND, HELEN SCOTT (MRS. R. H. CARPENTER)	Gen. Sci.	At home.
632 East 26th St., Brooklyn, N. Y.		
MOUNCE, LEROY LEIDMAN	Agr.	Manager, Upwey Farms.
South Woodstock, Vt.		
PEABODY, GEORGE ABBOTT	Elec. Eng.	Erecting Engineer, Construction Dept., General Electric Co.
Schenectady, N. Y.		
SHERMAN, JOHN LELAND	Agr...	Farmer.
R. F. D. 147, Mansfield, Mass.		
SMITH, HIRAM JAMESON	Civ. Eng.	First Lieutenant Engineers, 503rd Service Regt., Co. C., Amer. Exp. Force.
Woonsocket.		
WAGNER, ALBERT FREDERIC	Elec. Eng.	Asst. Professor of Elec. Engineering and Physics, U. S. Naval Acad- emy.
M. S., Purdue Univ., 1913. Box 516, Annapolis, Md.		
WHEELER, RICHARD HOWES	Elec. Eng.	Elec. Engineer, with Dwight P. Robinson Co.
61 Broadway, New York City.		
WORRALL, DAVID ELBRIDGE	Chem.	Asso. Professor of Organic Chem- istry, Tufts College.
M. A., Harvard Univ., 1911. Ph. D., Harvard Univ., 1919. 7 Edison Ave., Medford Hillside, Mass.		

1911

ANDREWS, CARMEN NICHOLS	Appl. Sci.	Teacher, A. P. Hoyt School, East Providence.
Slocums		
ANGILLY, CHARLES ENOCH, JR.	Civ. Eng.	Draftsman, Dept. of Public Ser- vice, Bureau of Water Works.
2200 So. Toberman St. Los Angeles, Cal.		
EASTERBROOKS, HAROLD ARNOLD	Biol.	Student, Tufts Medical School, Boston.
280 Benefit St., Providence.		
EASTERBROOKS, LOUIS CHURCH	Agr.	In business.
280 Benefit St., Providence.		
GILCHRIST, CLYDE RONALD	Elec. Eng.	Commercial Engineer, Supply Dept., Westinghouse Electric and Manufacturing Co.
618 Centre St, Wilksburg, Pa.		
HARRIS BURTON KENNETH	Chem. Eng.	Lime Manufacturer.
R. F. D., Saylesville.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HEALY, PATRICK JOSEPH..... 400 Madison Ave., New York.	Agr.	Gardener, care Ralph Armstrong.
KENT, ROBERT WILLARD..... 29 Morseland Ave., Newton Centre, Mass.	Mech. Eng.	Construction Engineer, Division Chief, with Cooley & Marvin Co., Boston, Mass.
MINOR, ARTHUR JACOB..... C. E., R. I. S. C., 1915. 30 Church St., New York City, N. Y.	Civ. Eng.	In Technical Department, National Employment Exchange.
NEAL, WILLIAM THOMAS..... Walton, N. Y.	Agr.	Proprietor of Tripp Floral Co.
ROBINSON, BENJ. ROWLAND... 32 Clark St., Worcester, Mass.	Mech. Eng.	Chief Draftsman, Sanford-Riley Stoker Co.
RUPRECHT, RUDOLF WILLIAM... M. S., Mass. Agr. College, 1914. Ph. D., Mass. Agr. College, 1916. Delmar-Morris Apartments, Germantown, Pa.	Appl. Sci.	Chief Chemist and Superintendent of Fertilizer Factory, F. W. Jun- nell & Co.
SAFFORD, HOWARD ALBERT..... National Soldiers' Home, Maine.	Agr.	Chief Gardener.
TUCKER, HARRIET TABER (MRS. DAVID E. WORRALL).... Cambridge, Mass.	Gen. Sci.	At home.
*WADE, CEYLON RAYMOND.....	Civ. Eng.	

1912

BARLOW, HENRY NEWELL..... Wassaic, N. Y.	Elec. Eng.	Dairy Farmer.
BIGELOW, CARLE MUZZY..... 16 Chestnut Terrace, Newton Centre, Mass.	Appl. Sci.	Member of Firm, Cooley & Marvin Co.
CALDWELL, DOROTHY WALCOTT.. M. S., R. I. S. C., 1914. Kingston.	Civ. Eng.	Student, University of Michigan.
CLARKE, PHILIP HARRISON..... 11 Washington Road, Scotia, N. Y.	Elec. Eng.	Industrial Control Engineer, Gen- eral Electric Co.
COBB, ELECTRA HENRIETTA (MRS. JOHN L. SHERMAN).. R. F. D. 147, Mansfield, Mass.	Home Econ.	At home.
DOLL, WALTER..... Granville, New York.	Mech. Eng.	General Superintendent, Sheldon Slate Products Co.
HENDERSON, ETHEL PIERCE (MRS. E. K. WILCOX)..... Wakefield.	Appl. Sci.	At home.
KENYON, ANNIE ELIZA (MRS. S. C. WEBSTER, JR.)... R. F. D., West Kingston.	Appl. Sci.	At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LARKIN, CHARLES HERBERT.	Civ. Eng.	Civil Engineer, with Boston & Maine Railroad.
56 Bower St., West Medford, Mass.		
NUTTING, BERTHA MAY (MRS. LEVERICH G. LENHAM)	Home Econ.	At home.
175 Norwalk Ave., Buffalo, N. Y.		
PATTERSON, ARTHUR JOHN.	Elec. Eng.	Illuminating Engineer, Davis Electric Co., Washington, D. C.
114 Carroll Ave., Tacoma Park, D. C.		
Washington, D. C.		
RICHMOND, FRED ALLEN.	Elec. Eng.	Mech. Valuation Pilot, N. Y. Central Railroad Co.
17 Stanley Place, Yonkers N. Y.		
SHERMAN, GEORGE WM. JR.	Elec. Eng.	Assistant Professor of Physics, Purdue University.
M. S. Purdue Univ., 1914.		
4 Murdock Flats, West Lafayette, Ind.		
*SLATER ALLAE CORDELIA (MRS. ARTHUR J. MINOR) . . .	Home Econ.	
WARNER, DAVID EDMOND, JR.	Agr.	Instructor in Poultry Husbandry.
Storrs, Conn.		
WEBSTER, SAMUEL C., JR.	Agr.	Farmer.
R. F. D., West Kingston.		
WHELAN, WILLIAM JOSEPH.	Appl. Sci.	Supt. of Buildings, R. I. S. C.
Kingston.		

1913

ALEXANDER, RALPH IRWIN.	Mech. Eng.	Head Instructor in Mechanical Engineering, Rensselaer Polytechnic Institute.
2342 Sixteenth St., Troy, N. Y.		
BATES, REUBEN CHARLES.	Civ. Eng.	Teacher, Longwood Day School.
36 Browne St., Brookline, Mass.		
BRETT, CLARENCE ELMER.	Agr.	Instructor in Poultry, R. I. S. C.
Kingston.		
BRIDEN, FRANK HAROLD.	Mech. Eng.	Supt. Dominion Works, Nicholson File Co.
Port Hope, Ontario, Canada.		
COHEN, BENJAMIN.	Elec. Eng.	Assistant Employment Manager, National Spun Silk Co.
227 Mt. Pleasant St., New Bedford, Mass.		
CONGDON, ESTHER LOOMIS (MRS. ARTHUR L. REYNOLDS)	Home Econ.	At home.
26 Farmington Ave., Waterbury, Conn.		
CORR, JOHN WILLIAM.	Appl. Sci.	Treasurer, The Greenwood Textile Supply Co.
East Greenwich.		
ELKINS, DOROTHY DEARBORN (MRS. ROBERT W. KENT) . . .	Home Econ.	At home.
29 Morseland Ave., Newton, Mass.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ELKINS, MARGUERITE WHITE, Home Econ. M. S., R. I. S. C., 1914. 17 Seymour Ave., S. E., Minneapolis, Minn.		Assistant Bacteriologist, Minn. State Lab. Division, Preventable Diseases.
HART, CRAWFORD PECKHAM.....	Agr.	Principal, High School.
Waterbury, Vt.		
IRONS, WALTER COLWELL.....	Agr.	Farmer.
North Scituate.		
KYLE, THOMAS.....	Agr.	Marine Plumber.
Balboa, Canal Zone.		
MITCHELL, IRVING CALVARY....	Appl. Sci.	Superintendent of Schools.
Valley Falls.		
REDDING, WILLIAM FRANCIS...	Elec. Eng.	Second Lieutenant, Infantry.
Porto Rico.		
REINER, WALDO.....	Civ. Eng.	Asst. Contract Engineer, Turner Construction Co., 244 Madison Ave., New York City.
45 Strong Place, Brooklyn, N.Y.		
REYNOLDS, ARTHUR LESLIE....	Elec. Eng.	Teacher, Math., Wilby High School.
Sc. B., Brown Univ., 1915. 399 Cooke St., Waterbury, Conn.		
SLOCUM, GEORGE EDWIN.....	Elec. Eng.	Sales Engineer, McCarthy Bros. & Ford.
75 W. Mohawk St., Buffalo, N. Y.		
*STECK, FRANK.....	Chem. Eng.	
TURNER, WALTER RAYMOND....	Appl. Sci.	Asst. Mgr., River Spinning Co., Valley Falls.
21 Sarah St., Providence.		
WILCOX, ERROLL KENYON.....	Civ. Eng.	Principal, South Kingstown High School.
Peacedale.		
WOOD, SUSIE STANTON.....	Home Econ.	Dietitian, Faxton Hospital.
Utica, N. Y.		
YOUNG, JAMES HANNIBAL.....	Appl. Sci.	With National City Bank of New York.
151 Joralemon St., Brooklyn, N. Y.		

1914

ALDRED, JAMES HILTON.....	Mech. Eng.	Chemist, Woonsocket Rubber Co.
Ashton.		
ANDERSON, WILLIAM EDWARD.....	Agr.	Instructor in Chemistry, Rensselaer Polytechnic Institute.
Troy, N. Y.		
ASPINWALL, FREDERICK OTTO..	Chem. Eng.	Factory Inspector, Assoc. Factory Mutual Fire Insurance Cos., 31 Milk St., Boston, Mass.
637 Main St., Pawtucket.		
BAXTER, FRANK HOWARD....	Mech. Eng.	Foreign Trade Representative, The National City Bank of New York.
1109 No. Broadway, Yonkers, N. Y.		
BENSON, ROBERT JOHN.....	Elec. Eng.	Electrical Maintenance and Con- struction Engineer, Wagner Elec. Mfg. Co.
5963 Maple Ave., St. Louis, Mo.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
*BOULESTER, EDWARD JAMES.	Appl. Sci.	
BROWNING, HAROLD WILLIAM.	Appl. Sci.	Fellow in Botany.
M. S., Univ. of Wisconsin, 1916.		
Biology Building, Univ. of Wisconsin, Madison, Wisconsin.		
CONNOR, THOMAS ROWLEY.	Civ. Eng.	In Maintenance Dept., N. Y., N. H. & H. R. R. Co.
Peace Dale.		
DAVIS, HENRY ELLIS.	Agr.	Mgr., R. I. Branch American Surety Co., 936 Grosvenor Bldg., Providence.
Providence.		
ESTY, JAMES RUSSELL.	Chem. Eng.	Bacteriologist National Canners' Association, Research Laboratory.
M. S., Brown University, 1915.		
Ph. D., Brown Univ., 1918.		
1739 H St., Washington, D. C.		
FINCH, MYRON WHITMARSH.	Agr.	Assistant Instructor Phys. Training, Brown University.
195 Morris Ave., Providence.		
FORD, HELEN WHEELER.	Home Econ.	Extension Service, Kansas Agr. College.
North Easton, Mass.		
HAWKINS, MYRON ANGELL.	Agr.	In charge of orchards, Singleton Farms.
Wallum Lake.		
JONES, CARLTON WALTER.	Civ. Eng.	Engineer, with Libby & Johnson.
Saco, Me.		
KARMANN, HERMAN HARRY.	Civ. Eng.	Surveyor.
156 Cardoni St., Detroit, Mich.		
KINNEY, LORENZO FOSTER, JR.	Appl. Sci.	With Lowland Rhododendron Farm.
Kingston.		
RIEDER, FRIEDA.	Home Econ.	Student, Columbia University.
45 Strong Place,		
Brooklyn, N. Y.		
REINER, HERBERT.	Agr.	With American Agricultural Chemical Co., 92 State St., Boston.
Portsmouth, N. H.		
ROSSI, LOUIS.	Civ. Eng.	Assistant Engineer, Water Works and Sewers Dept.
57 Oak St., Westerly.		
SAFFORD, EDITH MARIE		At home.
(MRS. HERBERT REINER)	Home Econ.	
Portsmouth, N. H.		
SULLIVAN, JOHN LEO.	Mech. Eng.	Head of Drafting Dept., Vocational High School.
9 Church Road, Newton, 58, Mass.		
TULLY, WILLIAM HENRY.	Appl. Sci.	Athletic Director and Teacher, Plainfield High School.
Central Village, Conn.		
TURNER, HARVEY ROBERT.	Civ. Eng.	In charge of Science Dept., Samuel Huston College, Austin, Texas.
Austin, Texas.		
WEBB, WILLIAM HARRY.	Elec. Eng.	General Engineering and Consulting Moody Engineering Co., Inc.
90 West St., New York City.		
WEBSTER, EARL CLIFTON.	Civ. Eng.	Principal Grammar School.
65 Daboll St., Providence.		

1915

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BALDWIN, GEORGE HOLLAND.....	Agr.	Salesman, Pawtucket Rendering Co.
BARNEY, RAYMOND LIVINGSTON... Beaufort, North Carolina.	Appl. Sci.	Director and Supt., U. S. Fisheries Biological Station.
BELFIT, ROBERT WILLIAM..... 44 Willow St., Waterbury, Conn.	Chem. Eng.	Chem. Engineer, Scovill Mfg. Co.
BORDEN, NORMAN HARRISON... Homewood, Ill.	Chem. Eng.	Chemist, Sherwin-Williams Co.
BRECHIN, JOHN..... 902 No. Evans Ave., McKeesport, Pa.	Mech. Eng.	Inspector, Ordnance Dept., U. S. Navy.
BROWNELL, KENNETH ALLEN... 9 Woodland St., Saylesville.	Chem. Eng.	Chemist, Sayles Finishing Plants.
COLEMAN, CARL LAFAYETTE.....	Agr.	Instructor in Agriculture, Gilbert School.
DODGE, WILLIAM EARL..... Block Island.	Civ. Eng.	Ensign, Executive Officer on Submarine Chaser, No. 294, care Postmaster, N. Y.
GATES, CURTIS WOLCOTT..... 45 Academy St., Newark, N. J.	Chem. Eng.	Asst. Sec., Employers Assoc. of North Jersey.
HALL, CARLISLE..... 187 Althea St., Providence.	Agr.	
HARDING, ADA LAPLACE..... 158 Caroline St., Derby, Conn.	Home Econ.	In charge of Domestic Science in Public High School.
HARRIS, LEON IRVING..... 465 Lycaste Ave., Detroit, Mich.	Elec. Eng.	With Chalmers Motor Co.
HUDSON, ROYAL CARLTON..... 34 Mumford St., Phenix.	Appl. Sci.	Student, Harvard Medical School.
HUNTER, ALBERT CLAYTON..... Ph. D., Brown Univ., 1918. 816 B St., S. W., Washington, D. C.	Appl. Sci.	Microbiological Lab., Bureau of Chemistry, Dept. of Agr.
JACKOWITZ, JOHN LOUIS..... 347 Orange St., New Haven, Conn.	Appl. Sci.	Medical Student, Yale Univ. Medical School.
KEITH, LAWRENCE FULLER..... 2016 W. 23rd St., Little Rock, Arkansas.	Agr.	Captain Field Artillery.
KIVLIN, ALFRED PATRICK..... 43 School St., North Attleboro, Mass.	Elec. Eng.	Engineer, Office at No. Attleboro.
LENNOX, FRANK JOSEPH..... 48 Front St., Woonsocket.	Chem. Eng.	Manufacturer and Dealer in Dye-stuffs, Oils, Soaps and Chemicals.
MEADE, JOHN EDWARD..... 142 Arch St., Philadelphia, Pa.	Civ. Eng.	Construction Engineer, with Agr. Chemical Co
MILLER, WESLEY CLIFTON..... 7 Maple Court, Brooklyn, N. Y.	Elec. Eng.	Lubricating Sales Engineer, The Texas Co.

NAME AND ADDRESS.

COURSE.

OCCUPATION.

NICHOLS, JOSEPH ELTON	Mech. Eng.	Second Lieutenant, Field Artillery, U. S. Army.
Woonsocket.		
NORDQUIST, HARRY O. VALDIMAR, Civ. Eng.		Second Lieutenant, C. A. C., Fort- ress Monroe, Va.
83 Hamlin St., Providence.		
PARKER, RALPH LANGLEY	Agr.	Student, Iowa State College, Ames, Iowa.
Brockton, Mass.		
WATSON, ADELAIDE GILBERT (MRS. FRANK H. BRIDEN) . .	Home Econ.	At home.
Port Hope, Ontario, Canada.		
WHITTAKER, LEROY ALLEN	Elec. Eng.	Captain, C. A. C.
Fort Ruger Honolulu, H. T.		
WILCOX, HAROLD CLAYTON	Agr.	Teacher of Science, Columbus Academy.
1495 Franklin Ave., Columbus, Ohio.		

1916

ALDRICH, DANIEL GASKILL	Agr.	Head Master, Coe's Academy, and Pittsfield High School.
Pittsfield, N. H.		
BECKER, WILLIAM JOSEPH, JR., Mech. Eng.		Chief Inspector, Inspection Div., Ordinance Dept., U. S. A.
225 So. Van Dien Ave., Ridgewood, N. J.		
BURR, DOROTHY ISABELLE	Home Econ.	At home.
(MRS. THOMAS W. FREEMAN), Rockford, Ill.		
CARLETON, EVERETT AUGUSTUS	Agr.	Chemist, DuPont Chemical Co.
Riverside Club, Penn's Grove, N. J.		
CHANTLER, AMBROSE ROYLE	Chem. Eng.	Chemist, with E. I. DuPont De Nemours Co., Dyestuffs Div.
130 West Ave., Pawtucket.		
CONYERS, CLARENCE JOHN	Agr.	Farm Manager.
142 Burnett St., Providence.		
CORDIN, GILBERT RALPH	Chem. Eng.	Secretary, New England Hosiery Co.
16 Harvard Ave., Providence.		
CURRAN, EMILIE MAY	Home Econ.	At home.
(MRS. NORMAN H. BORDEN), Washington, D. C.		
DANIELS, HENRY FALES	Civ. Eng.	Engineer, with Cooley & Marvin Co., Boston, Mass.
35 Star Street, Pawtucket.		
FARON, FRANCIS ALQYSIUS	Elec. Eng.	Designing Engineer, General Elec- tric Company.
111 Wendell Ave., Schenectady, N. Y.		
FIELD, ERNEST GEORGE	Mech. Eng.	With DeLaval Steam Turbine Co.
839 Stuyvesant Ave., Trenton, N. J.		
FINE, SOLOMON	Appl. Sci.	Secretary-Manager, Pacific Live- Stock Exchange; Manager, The W. K. Taylor Co.
M. S., R. I. S. C., 1917. 2202 Monroe St., Corvallis, Oregon.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRASER, DEAN BLENUS.....	Civ. Eng.	Technical Section, Dept. Military Aeronautics.
Washington, D. C.		
FREEMAN, THOMAS WILLIAM....	Civ. Eng.	First Lieutenant, Co. B, 52nd Inf.
Camp Grant, Rockland, Ill.		
GLASHEEN, RALPH EARLE.....	Civ. Eng.	Asst. Superintendent Turner Construction Co.
251 West 71st St., New York City.		
*HANLIN, WILLIAM FRANK.....	Agr.	
HENRY, JAMES MURRAY.....	Mech. Eng.	Construction Assistant, Electric Boat Company, Groton, Conn.
Stonington, Conn.		
HOLLEY, LEONARD STANLEY.....	Agr.	Farmer.
Wakefield.		
HOXSIE, ANNIE SARAH.....	Home Econ.	Teacher, Bacon Academy, Colchester, Conn.
Canonchet.		
KELLY, HENRY CLINTON.....	Civ. Eng.	Engineer, with E. I. DuPont De Nemours, Wilmington, Delaware.
769 Commonwealth Ave.,		
Detroit, Mich.		
LAGERSTADT, SETH FREDERICK HADLEY,		Ensign, U. S. Naval Reserve.
Brockton, Mass.	Agr.	
LEWIS, WILLIAM EMANUEL.....	Agr.	With Providence Farmers' Exchange, 48 Rathbone St., Providence.
70 Anthony St., East Providence.		
LLOYD, LESTER WILLIAM.....	Agr.	Animal Husbandman, Extension Service, R. I. S. C.
Kingston.		
LUSSIER, GEORGE EMILE.....	Elec. Eng.	Engineer, Brown Bag Filling Machine Co.
93 Highland Ave., Fitchburg, Mass.		
MCLEOD, LEANDER WALLACE..	Mech. Eng.	With Ashcroft Mfg. Co.
Bridgeport, Conn.		
MEDBURY, HENRY EDMUND....	Appl. Sci.	Chemist, East Providence Branch Industrial Chemical Co.
East Providence.		
MEEARS, ETTA ELIZABETH		
(MRS. ERNEST G. FIELD)...	Home Econ.	At home.
839 Stuyvesant Ave.,		
Trenton, N. J.		
MILNES, CHARLES IRVING....	Chem. Eng.	Chemist, Wanskuck Co.
46 Priscilla Ave., Providence.		
PALMER, THEODORE ANDREW.....	Agr.	Professor of Animal Husbandry and Physical Director, Riggs School.
Lakeville, Conn.		
PARKER, CLARENCE HOWARD..	Mech. Eng.	Plant Engineer, Package Confectionery Co., South Boston.
119 Oakley Road, Belmont, 78, Mass.		
PRICE, MILTON HARRIS.....	Agr.	First Lieutenant, Cavalry, Fort Sam Houston, Texas.
29 Sessions St., Providence.		
RANDALL, BERTHA ADELAIDE..	Home Econ.	Chemist, New Jersey Zinc Co. of Pa
421 Lafayette Ave., Palmerton, Pa.		
RANDALL, PHINEAS MUNSELL...	Elec. Eng.	Assistant to Works Elec. Eng., Westinghouse El. Mfg. Co.
547 Page Boulevard,		
E. Springfield, Mass.		

NAME AND ADDRESS.

COURSE.

OCCUPATION.

ROWELL, HOMER RANSOM	Agr.	Photographer of Amer. Expeditionary Force Pictures.
Groveland, Mass.		
SEIFERT, CHARLES EDWARD	Elec. Eng.	Service Engineer, Thomson Electric Welding Co.
4141 Georgia Ave., Cincinnati, Ohio.		
SHORT, CARLETON WEBB	Chem. Eng.	Department Finisher, Sayles Finishing Plants.
56 John St., East Providence.		
VICTORY, THOMAS FRANCIS	Elec. Eng.	First Lieutenant, C. A. C.
Warren.		
WALMSLEY, EARL	Chem. Eng.	Goodyear Tire and Rubber Co.
95 Frances Ave., Akron, Ohio.		
YOUNG, VINCENT CASE	Mech. Eng.	Asst. to Chief Engineer, International Motor Co.
Plainfield, N. J.		

1917

AMES, ARNOLD WILLARD	Mech. Eng.	Shipbuilding, Fore River Plant.
18 Washington St., Quincy, Mass.		
ANDERSON, JOHN GORDON	Appl. Sci.	Student, Harvard Medical School.
15 Newton St., Westerly.		
ANTHONY, HAROLD CONGDON	Agr.	Production Dept., Eastern Malleable Iron Co., Naugatuck Branch.
58 Concord St., Waterbury, Conn.		
BARTELS, HENRY ARTHUR	Agr.	Asst. Bacteriologist, New York State Dept. of Public Health.
337 Madison Ave., Albany, N. Y.		
BROADFOOT, HENRY HARRINGTON,		Teacher, West Warwick High School.
Westerly.	Chem. Eng.	
BROWNE, ELIZABETH HOPE	Home Econ.	Home Demonstration Agent, Extension Service, Providence.
232 Cottage St., Pawtucket.		
CLARK, JAMES ANDREW	Chem. Eng.	Instructor in Chemistry and Dyeing, R. I. School of Design.
39 Salina St., Providence.		
COHEN, HARRY	Elec. Eng.	Assistant Examiner, U. S. Patent Office.
1205 Clifton St., N. W., Washington, D. C.		
DUNHAM, LESLIE LINCOLN	Agr.	Assistant County Agr. Agent.
Huntington, West Va.		
EASTERBROOKS, WILFRED ROSS . .	Civ. Eng.	Civil Engineer, with Corps of Engineers, U. S. Army.
Wakefield.		
EBBS, ROBERT ALLEN	Chem. Eng.	Second Lieutenant, 534th Engineers, Amer. Expd. Force.
34 Powell Ave., Newport.		
FLYNN, WILLIAM AUGUSTUS	Civ. Eng.	Engineer, General Fire Extinguisher Co.
59 Beaufort St., Providence.		
GODDARD, FRANKLIN PERRY	Elec. Eng.	Shipbuilding, Fore River Plant, Quincy, Mass.
29 Gould St., Newport.		
HARRY, CHARLES EDWARD	Agr.	Instructor in Science, Bishop College.
Marshall, Texas.		
HAWKINS, CLINTON DEXTER	Chem. Eng.	Chemist, Page-Storms Drop Forge Co.
120 Springfield St., Chicopee, Mass.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HILL, EDWIN DOUGLAS.....Agr. Huntsville, Sussex Co., N. Y.		Farm Manager, Wawayanda Farms.
JOHNSON, CHARLES VARNUM....Civ. Eng. Peace Dale.		Engineer, R. I. State Board of Public Roads.
KENDALL, DONALD JOHN.....Agr. 201 Pleasant St., Brockton, Mass.		Captain, 59th Co., 7th Regt., U. S. Marine Corps.
LAHN, ABRAHAM SAMUEL.....Civ. Eng. Fort Wayne, Indiana.		Assistant, Eng. Corps, Penn. R. R.
LAWRENCE, SAMUEL EUGENE....Appl. Sci. 22 Shirley Ave., Revere, Mass.		Physical Director, Revere Schools.
LEBOEUF, ALBERT ALPHONSE....Appl. Sci. 354 Hood St., Fall River, Mass		Captain, Base Detachment, 5th Regt. U. S. Marine Corps.
MCINTOSH, ALBERT EDWARD....Civ. Eng. 59 Lisbon St., Providence.		Captain, Co. C, 15th Cavalry, Fort D. A. Russell, Wyoming.
PYNE, JAMES FRANCIS.....Civ. Eng. 12 Gifford St., Brockton, Mass.		Ship Draftsman, Boston Navy Yard.
REDFERN, ERNEST ELMER.....Chem. Eng. 1124 Fourth Ave., Ford City, Pa.		Asst. Supt., Pittsburgh Plate Glass Co.
*REDFORD, DAVID ADAM.....Mech. Eng.		
RIECKEL, GRACE LILLIAN (MRS. LESTER W. LLOYD)..Home Econ. Kingston.		At home.
RODMAN, SAMUEL LYMAN.....Agr. Gould.		Farmer.
SLOCUM, KENNETH MATTESON...Civ. Eng. Suite 15, 463 Audubon Road, Boston, Mass.		Engineer, Cooley & Marvin Co,
SMITH, HAROLD BURLIN.....Appl. Sci. 25 Florence St., Brockton, Mass.		Mechanical Cost Dept., W. F. Schrafft & Sons Corp., 160 N. Washington St., Boston, Mass.
TAYLOR, RAYMOND DOUGLAS.....Agr. Bedford, Mass.		Manager, Poultry and Fruit Farm.
TEW, JOSEPH GARDINER.....Appl. Sci. 415 Blackstone St., Woonsocket.		Asst. Supervisor of Apprentices, Taft-Peirce Mfg. Co.
THAYER, AUBREY HARVEY.....Elec. Eng. 1907 East 40th St., Cleveland, Ohio.		Chief of Technical Branch, Ordnance Dept.
TILLINGHAST, THEOSE ELWIN..Mech. Eng. 221 West First St., Dayton, Ohio.		Aeronautical Mechanical Engineer, with Eng. Div., Air Service.
WANSKER, HARRY ABE.....Civ. Eng. 76 Quint Ave., Allston, Mass.		Ship Draftsman, Boston Navy Yard.
WELLES, ASHBEL RUSSELL.....Agr. Wethersfield, Conn.		With Comstock, Ferre & Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILLIAMSON, JAMES HUGH.	Civ. Eng.	Captain, 185th Co., 15th Regt., U. S. Marine Corps.
Newport.		
WISBEY, HERBERT ANDREW.	Agr.	Principal, High School.
Mendon, Mass.		

1918

BARTON, HENRY, JR.	Civ. Eng.	Foreign Service Class, Standard Oil Co. of N. Y.
25 East 11th St., New York City.		
BLAKE, NELSON EVERETT.	Chem. Eng.	With DuPont Powder Co.
Penn's Grove, N. J.		
CAMERON, LORNE ATWOOD.	Agr.	Asst. Supt., Sexton Canning Co.
33Oakes St., Everett, Mass.		
CHANDLER, RUTH WESTLAKE (MRS. NORMAN W. DOVE).	Home Econ.	At home.
279 Union Ave., Providence.		
COYNE, SARAH ELIZABETH.	Home Econ.	Asst. Biological Chemist, Boston Floating Hospital.
1126 Boylston St., Boston, Mass. .		
DEVINE, JAMES JOSEPH.	Mech. Eng.	With F. W. D. Co., Clintonville, Wisconsin.
61 Centre St., Bridgewater, Mass.		
EDMISTON, IRMA RATHBUN.	Home Econ.	Bacteriologist, Robert B. Green Memorial Hospital.
San Antonio, Texas.		
FAIRBANKS, GEORGE HENRY.	Elec. Eng.	Chief Engineer, Sayles Finishing Plants, Saylesville.
52 Pacific St., Central Falls.		
GILLIS, WILLIAM ELLIS.	Appl. Sci.	Teacher of Science, High School.
Box 616, Stonington, Conn.		
GROVES, LESTER DAVIS.	Agr.	Supervisor, Burlington Co., Cow- Testing Association.
Mt. Holley, N. J.		
HAGGARTY, CHARLES WILLIAM.	Elec. Eng.	Weaver.
Allenton.		
HASKELL, DOROTHY ESTELLE.	Home Econ.	Chemist and Bacteriologist, City Dept. of Milk Inspection, Provi- dence.
West Barrington.		
KINNEY, ESTHER LEE.	Home Econ.	Assistant Director, Y. W. C. A. Cafeteria.
Providence.		
LERMOND, CHARLES ELWYN.	Mech. Eng.	Draftsman, Civil Service, U. S. Nitrate Plant No. 1, Sheffield, Ala.
Washington, D. C.		
LYNCH, DANIEL JOSEPH, JR.	Mech. Eng.	With General Electric Co., Lynn, Mass.
Brockton, Mass.		
MEYER, ARTHUR HENRY FRED'K, Chem. Eng		Chemist, Providence Gas Co.
139 Webster Ave., Providence.		
SPARGO, RAYMOND ALEXANDER.	Agr.	Farmer.
Box 473, Westerly.		
STILLMAN, HANNAH AMELIA.	Home Econ.	Director of Household Economics, Beaver College.
Beaver, Pa.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
STONE, ALBERT..... Colonial Hotel, Penn's Grove, N. J.	Appl. Sci.	Chemist, Indigo Laboratory, E. I. DuPont de Nemours Co., Deep Water, N. J.
STRAND, HENRY RICHARD..... Newport.	Agr.	Farmer, Bethshan-in-the-Woods.
TORGAN, MILTON..... 348 Orms St., Providence.	Appl. Sci.	Student, Harvard Medical School.
WALSH, JAMES RUSSELL.....	Mech. Eng..	Aeronautical Mech. Eng., Cook-McField Co., Dayton, Ohio.
WANSKER, JOSEPH..... 76 Quint Ave., Allston, Mass.	Chem. Eng.	Chemical Analyst.

1919

BURGESS, WAYLAND MCCOLLEY, Kingston.	Chem. Eng.	Instructor in Chemistry, R. I. S. C.
CARGILL, DANIEL OLNEY..... Valley Falls, R. F. D. No. 2. 70 Church St., Dedham, Mass.	Civ. Eng.	Civil Engineer.
CARPENTER, EDWARD LEROY . Wakefield.	Mech. Eng..	Instructor in Mechanical Engineering, Case School of Applied Science, Cleveland, Ohio.
CARPENTER, PHILIP MARTIN.... 76 Parker St., Pittsfield, Mass.	Elec. Eng.	Student Engineer, Testing Dept., General Electric Co.
CREEDON, MICHAEL VINCENT..	Mech. Eng.	
DALZELL, CHARLES DAVIES..... Weare Centre, N. H.	Agr..	Headmaster, Weare High School.
DOWLING, JOHN JOSEPH..... 283 Newbury St., Boston, Mass.	Chem. Eng..	Engineer, with Stone & Webster.
GAMBLE, EDWARD HENRY..... Riverside Club, Penn's Grove, N. J.	Chem. Eng.	Chemist, with E. I. DuPont de Nemours Co.
GARDNER, ANNA PECKHAM.... Saunderstown, R. F. D.	Home Econ.	Teacher, Cranston.
HARRINGTON, HERMAN BATTEY.....	Agr..	County Agent, Woodsville, N. H.
HILDRETH, CHARLES TEW..... Burkburnett, Texas.	Elec. Eng.	With the Texas Oil Co.
HOLLEY, ARTHUR TUCKER..... Wakefield.	Agr..	In farm and ice business.
IRONS, MERRILLA ALTHEA.... North Scituate.	Home Econ.	Teacher, Proctor Academy, Andover, N. H.
KEEGAN, LESLIE ARTHUR..... Orono, Me.	Agr..	Instructor in Agronomy, University of Maine.
KINNEY, HELEN WELLS..... Kingston.	Home Econ.	Teacher, Household Arts, Northfield Seminary, East Northfield, Mass.
MARX, HOWARD EARLE.....	Civ. Eng.	With Texas Oil Co., Burkburnett, Texas.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
MITCHELL, JAMES ALBERT.	Elec. Eng.	Electrical Draughtsman, Hartford Electric Light Co.
3 Alden St., Hartford, Conn.		
MURPHY, JAMES ALOYSIUS. . . .	Chem. Eng.	
MURRAY, RUTH GOODWIN.	Home Econ.	Home Demonstration Agent, Newport County Farm Bureau.
28½ Rhode Island Ave., Newport.		
NICHOLS, RUHAMAH ROBINSON, Home Econ.		Laboratory Apprentice, N. Y. State Dept. of Health.
259 Quail St., Albany, N. Y.		
O'BRIEN, CHARLES FRANCIS. . . .	Mech. Eng.	Assistant Engineer, with Western Union Telegraph Co.
195 Broadway, New York City.		
PETERSON, THURSTON WALDEMAR,	Mech. Eng.	Assistant Superintendent, Sheldon Slate Products Co.
22 Mettowee St., Granville, N. Y.		
SHIPPEE, FLORENCE LOUISE. . . .	Home Econ.	Student Dietitian, at Pennsylvania Hospital.
Eighth and Spruce Sts., Philadelphia, Pa.		
SMITH, PRISCILLA DaCOSTA. . . .	Home Econ.	Teacher, Household Arts, Barnstable High School.
Hyannis, Mass.		
SPENCER, LEANDER BURNSIDE. Chem. Eng.		Salesman, with Burroughs Adding Machine Co.
East Greenwich.		
SULLIVAN, CHARLES McMANUS,	Chem. Eng.	
THORNTON, ALBERT ANGELL.	Agr.	Instructor in Vocational Agriculture, Colt Memorial High School.
93 Constitution St., Bristol.		
WAUGH, GEORGE LINCOLN.	Agr.	Agent in Dairying, U. S. Dept. of Agriculture
Durham, N. H.		
WELLS, LESTER EARL.	Elec. Eng.	Lieutenant of Engineers, U. S. Coast Guard.
U. S. Coast Guard Cutter, Tuscarora, Key West, Florida.		
YOUNG, MARGERIA LENORE. . . .	Home Econ.	Technician, Pathological Laboratory, Grace Hospital.
1416 Chapel St., New Haven, Conn.		

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FOR MAY, 1921

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CATALOG OF THE COLLEGE



KINGSTON, R. I.

1921

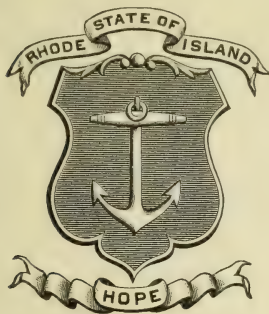
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MAY, AUGUST, NOVEMBER, FEBRUARY

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E. L. FREEMAN COMPANY, PRINTERS, PROVIDENCE

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EXAMINATION OF ENTERING AND CONDITIONED STUDENTS.—Professors Jackson, Coggins.

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*In coöperation with U. S. Dept. of Agriculture.

†In coöperation with Dairy Division, Bureau of Animal Industry, U. S. Dept. of Agriculture and R. I. State Board of Agriculture.

‡In coöperation with the United States Department of Agriculture and Farm Bureaus.

College Calendar

Tuesday, September 20, 1921, 9 A. M.,

Examination of Entering and Conditioned Students

Wednesday, September 21, 9 A. M. Registration

Thursday, September 22, 8 A. M. Recitations Begin

Wednesday, October 12, Holiday. Columbus Day

Saturday, November 19, 1 P. M. First Quarter Ends

Monday, November 21, 8 A. M. Second Quarter Begins

Wednesday, November 23, 12 M. }
 Monday, November 28, 8 A. M. } Thanksgiving Recess

Saturday, December 17, 12 M. . . . }
 Tuesday, January 3, 1922, 8 A. M. } Christmas Recess

Friday, February 10, 4:35 P. M. First Term Ends

Tuesday, February 14, Registration, 9 A. M. Second Term Begins

Wednesday, February 15, 8 A. M. Recitations Begin

Wednesday, February 22, Holiday. Washington's Birthday

Wednesday, April 12, 4:35 P. M. }
 Tuesday, April 18, 1 P. M. } Easter Recess

Wednesday, April 12, 4:35 P. M. Third Quarter Ends

Tuesday, April 18, 1 P. M. Fourth Quarter Begins

Friday, May 12, Holiday. Arbor Day

Saturday, May 13. Interscholastic Field Meet

Tuesday, May 30, Holiday. Memorial Day

Sunday, June 18. Baccalaureate Address

Monday, June 19. Commencement

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RHODE ISLAND STATE COLLEGE

Foundation

The college is one of the so-called land-grant colleges. Of the purpose of these institutions Senator Morrill, the author of the national legislation which brought them into existence in all the states, says:

“The fundamental idea was to offer an opportunity in every state for a liberal and larger education to large numbers, not merely those destined to sedentary professions, but to those needing higher instruction for the world’s business, for the industrial pursuits and professions of life.” Again he says: “It was to give a chance to the industrial classes of the country to obtain a liberal education, something more than what was bestowed by our universities and colleges in general, which seemed to be based more on the English plan of giving education only to what might be called the professional classes, in law, medicine, and theology.”

The college has also a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows:

(1) The interest on \$50,000, which was the net amount received by the State from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.

(2) The annual appropriation of \$15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.

(3) The annual appropriation of \$25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as follows:

"To be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the State under the Adams Act of 1906, yielding each year \$15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting yearly to \$25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The funds coming from the general government to the State under the Smith-Lever Act of 1914, amounting yearly to \$10,000. This funds is exclusively for extension work in agriculture and home economics.

(7) The annual maintenance fund from the State, at present, \$100,000, used for all the purposes for which the funds of the general government cannot be used: *e. g.*, for executive and administrative work; for heating, lighting, and maintenance of buildings; for the teaching of modern languages other than English; for the teaching of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroly revised during the years 1906-07 and 1907-08. The course in home economics was introduced in 1908.

Object and Organization

The function of Rhode Island State College is to aid in fostering the agricultural, industrial, and home-making life of the State. This it does in three ways: 1. by the investigation and discovery of new truths more or less directly applicable in agriculture and the industries; 2. by the direct distribution of information to the people; 3. by the organization and administration of definite courses of instruction designed to fit young men and young women for effective work in the vocational pursuits.

The first of these duties is performed by the

Experiment Station

for a description of the work of which the reader is referred to the report of the director, included in the report of the Board of Managers for the current year. A statement of its staff organization may be found on page 6 of this catalog.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all who desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, the

College Extension Division

is organized under provisions of the Smith-Lever Act, according to the recommendations of the Federal Department of Agriculture and the present prevailing practices thruout the country. The work is now arranged on a project basis and the following is a summary of the projects formulated and approved and now in force.

PROJECT NO. 1. ADMINISTRATION: This project outlines plans for organization and supervision of all the different lines of work in the Extension Division, including arrangements of budgets, organization of office work, preparation and distribution of publications, employment and supervision of workers, preparing reports of work, approval of requisitions for supplies and in general coördinating all the different activities in this branch of the college. The work is placed in charge of a Director of Extension, who is also State Leader of County Agents.

PROJECT NO. 2. COUNTY AGENT WORK: This project provides that there shall be organized in the State three farm bureau districts and that the college and the U. S. Department of Agriculture will coöperate with each of the three Farm Bureaus in the employment and supervision of a county agricultural agent. All county agents are assisted by the State Leader and by Extension Committees at the College in formulating projects for the work suggested by the Farm Bureau organizations, local Farm Bureau Committees, or by the college, and so far as possible specialists from the college aid the agents in carrying out the work under these projects.

PROJECT No. 3. HOME ECONOMICS: A State Leader in Home Economics Extension work is engaged to organize and conduct extension work thruout the State, for the purpose of giving instruction by means of demonstrations, personal conferences, lectures, publications, correspondence, and otherwise, concerning,—(a) Foods; their characteristics, nutritive qualities, and economical production; selection and preservation, preparation and serving. (b) Fabrics; their qualities and adaptations, methods of making into clothing and articles for household use; approved methods and agents used in laundering; care and preservation. (c) House planning; remodeling, rearrangements to secure convenience in household work and management; effective heating, lighting, water supply and sewage disposal systems. (d) Household management; the proper furnishing and keeping of the house for the purpose of economic efficiency, comfort and beauty together with simple methods of household accounting. (e) Home industries of such nature as may fit in with broad types of farming and with the financial resources, tastes, and ambitions of particular families or groups of families in relation to supplying home needs and accessible markets.

So far as finances permit, Farm Bureaus will be encouraged to employ home demonstrators and as soon as a home demonstrator is settled in a farm bureau, home economics work in that district will be carried on in coöperation with the Farm Bureau, the State Leader being recognized as joint supervisor of the work with the Farm Bureau.

Two such demonstrators are now employed, one by Newport County, and one by coöperation between the Southern Rhode Island and Providence County Farm Bureaus.

PROJECT No. 4. CLUB WORK: A State Leader with such district assistance as circumstances warrant and funds will permit is employed to conduct demonstrations with boys and girls in farm and home activities; and to organize them into clubs that take up special projects with field crops and home gardens, home canning, also poultry, pigs, and other farm animals. Instruction is given in methods of marketing crops and animals and the best way to save the surplus food products by home canning and how to prepare the canned goods for table use or to market them. Efforts are made to furnish the clubs with local leadership and field instructions essential to success in the work.

Projects 5, Agronomy, 6, Poultry Husbandry, and 7, Dairy Extension, have been discontinued for want of funds with which to carry them on.

Engineering Extension Work

In the engineering department, as well as in the other branches of the college, the endeavor is to be of the greatest possible service to the people of the State, not only in the matter of providing formal instruction to students coming to the college, but also in giving help and information to those outside the college enrollment who are desirous of extending their technical knowledge, and to whom, for one reason or another, a regular college course is impossible.

To this end there has been offered in the past a short course of two years' duration, in which instruction has been given in the elements of engineering. Experience, however, has shown that those most eager to avail themselves of this kind of instruction, and those who would be most helped by it, are unable to leave their regular duties to attend classes at the college.

As a consequence, the short course work in engineering at the college has been discontinued, and in its place has been inaugurated the plan of extension work in engineering. Instead of taking the man away from his regular duties to bring him to the work, the present plan is to carry the work to the man.

This extension work is carried out in two chief ways,—by means of separate lectures on specific topics, and by means of progressive study in organized classes. The subjects presented are all of a technical character and are adapted to the particular needs and capabilities of the classes.

The present requirements for such class work are that a suitable place for meeting be provided, and that the attendance be regular. This regularity of attendance is a matter of the greatest importance, since without it little or no progress is possible.

Classes have been conducted in various places in The Use of the Slide Rule, Mechanism and Shop Calculations, Power Plant Computations, etc. Instruction in these and any other desired branch of engineering may be had by citizens of the State by complying with the requirements mentioned, the number of such courses being limited only by the available time of the members of the department. Also lecturers will be provided to present various phases of engineering before technical organizations and engineering societies.

The College as an Educational Agency

In its third form of activity, the purpose and work of Rhode Island State College is to give college training and culture to young men and young women, not in spite of, but thru and with, vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroly efficient worker.

Employment

The College maintains an Employment Committee whose purpose is to list as many positions, of all kinds, as possible. The undergraduate is advised as to work for the summer and the graduate is helped to find a position as soon as he leaves school. The Committee is frequently appealed to for candidates for good situations where experience is called for. Thru a card index of the alumni of the College the Committee brings the proper persons into contact with these openings.

The Committee, of course, is not able to guarantee places and yet it usually lists more positions than it can fill.

Correspondence is solicited from employers and from those wishing to secure employment. Address: Employment Committee, Rhode Island State College, Kingston, R. I.

I. THE DEGREE COURSES

Certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in mathematics, pure and applied; the English language as a means of intercommunication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses, moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-

winning, but also preparation for citizenship, and for moral and social life, have intertwined with the vocational work and study, previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools. They thus become an integral part of the school system of the State. Young men and young women, citizens of the State and having requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are agriculture, engineering, applied science, home economics, and vocational education courses in agriculture and home economics, all leading to the degree of Bachelor of Science; a two-year course (based on a recognized two-year normal school course) leads to the degree of Bachelor of Education.

The Agricultural Course

(Including Agricultural Education Courses)

The agricultural course is intended to give thoro preparation for taking charge of and operating a piece of landed property; also by the introduction of education courses, to fit the students for positions as teachers of vocational agriculture in the high schools established under the provisions of the Smith-Hughes act, college teachers of agriculture, and extension workers. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thoro study of the sciences bearing directly on such work, viz.: botany, chemistry, geology, zoölogy, anatomy, physics, bacteriology and entomology, with courses in educational psychology, history of education, and special methods in agricultural teaching. In addition it embraces the culture and mental discipline arising from the study of mathematics, drawing, English literature, composition and rhetoric, modern languages, history, economics. The course is planned to give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first and second years; in the second half of the junior year, in addition to the required work for all students in the course, two optional lines of work are offered, one of which must be selected by the student and followed until graduation. The two lines offered are horticulture and animal husbandry. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. All candidates for a degree in the agricultural course are required to spend at least six months in practical farm work before the degree is granted. Students in the agricultural course who elect courses in education and practice teaching as required in the State plan for vocational education qualify for teachers' certificates and for employment as teachers of agriculture in public high schools. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition.	3	English I—Rhetoric and Composition.	3
Math. III—Algebra, 4 recitations.	2½	Chemistry II—General Chem. and Qualitative Analysis.	3 [1½]
Math. II—Trigonometry, 4 recitations	2½	Botany I—General.	1 [2]
Chemistry I—General.	2 [1½]	An. Husb. I—Stock Judging.	[2]
Botany I—General.	1 [2]	An. Husb. III—Breeds.	2
Hort. I—Propagation of Plants.	1 [1]	Hort. II—Vegetable Gardening.	2
Art II—Pencil Drawing.	[1]	Hort. IV—Spraying and Pruning.	1 [1]
Mil. Sci. and Tactics I—Drill.	[1]	Mil. Sci. and Tactics I—Drill.	[1]
Mil. Sci. and Tactics II—Theory.	1	Mil. Sci. and Tactics II—Theory.	1
Physical Training.	[1]	Physical Training.	[1]

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.	3	English III—Argumentation.	2
Chemistry IVb—Organic Chemistry.	3 [1]	Chemistry XIV—Agricultural Chemistry.	4
Botany II—Botany of Crops and Weeds.	1 [2]	Physics I—Descriptive Physics.	5
Zoology X—Vertebrate Zoology.	2 [2]	Botany III—Trees and Shrubs.	[1]
Civil Engineering I—Surveying.	1 [2]	Zoology X—Vertebrate Zoology.	2 [2]
Mil. Sci. and Tactics I—Drill.	[1]	Geology I.	2
Mil. Sci. and Tactics IV—Theory.	1	Mil. Sci. and Tactics I—Drill.	[1]
Physical Training.	[1]	Mil. Sci. and Tactics IV—Theory.	1
		Physical Training.	[1]

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS
English IX—Debating.	1	Agron. IV—Farm Crops.	3 [1]
Hort. III—Fruit Culture.	3	Agron. VII—Farm Management.	2
Agron. III—Soils and Fertilizers.	3 [1½]	Psy. and Edu. III—School Law.	3
An. Husb. XIIa—Poultry Culture.	1	History I—Industrial History.	3
Psy. and Ed. IV—Educational Psychology.	3	Mil. Sci. and Tactics V—Theory.	
English IV—Modern Essays.	3	Mil. Sci. and Tactics I—Drill.	
Mil. Sci. and Tactics V—Theory.	[1]	Physical Training.	[1]
Mil. Sci. and Tactics I.		Choose Option A or B.	
Physical Training.	[1]	A. Horticulture.	[2]
Elect one.		Botany IV—Forestry.	
Hort. XVI—Landscape Gardening.	1 [2]	Hort. XVII—Small Fruits.	2 [1]
An. Husb. X—Vet. Practice.	3	Elective.	4 or 5
		B. Animal Husbandry.	
		An. Husb. VII—Dairy Practice.	1 [2]
		Elective.	4

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Agronomy X—Agricultural Experimentation.....	3
An. Husb. VI—Feeds and Feeding...	3	Agronomy XIII—Marketing Farm Products.....	3
Psy. and Ed. II—History and Principles of Education.....	3	Voc. Ed. IV—Special Method in Teaching Agriculture.....	3
Agronomy XII—Farm Accounts.....	1 [2]	Mil. Sci. and Tactics VI—Theory... } or	3
Mil. Sci. and Tactics VI—Theory... } or	3	Elective..... } Mil. Sci. and Tactics I—Drill.....	[1]
Elective.....	[1]	Physical Training.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]	Choose Option: A. or B.	
Physical Training.....		A. <i>Horticulture</i>	
Choose Option A or B.		Hort. X—Pomology.....	1 [2]
A. <i>Horticulture</i>		B. <i>Animal Husbandry</i>	
Hort. X—Pomology.....	1 [2]	Botany IV—Forestry.....	[2]
B. <i>Animal Husbandry</i>		or	
Elective.....	6	Hort. XVII—Small Fruits.....	2 [1]
Voc. Ed. II—Practice Teaching.....	3†	Elective.....	3 or 4
		B. <i>Animal Husbandry</i>	
		An. Husb. IV—Breeding.....	3
		Elective.....	3
		Voc. Ed. II—Practice Teaching.....	3†

†Practice Teaching to be taken either first or second term by arrangement with instructor in charge.

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Engineering Course

The engineering course has the same duration and the same general plan as that usually offered in the standard technical colleges. Students will follow the course as laid down until the sophomore year, at which time they must elect one of the four optional lines offered, viz.: mechanical, electrical, civil, and chemical engineering. Any line of work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and efficient work in the great manufacturing and commercial industries of the State; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. The tabulated course follows:

Freshman Year

For the first year the course is the same for all students of engineering.

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition.....	3	English I—Rhetoric and Composition.....	3
Math. I—Algebra, 4 recitations.....	2½	Math. VIIIa—Analytics.....	5
Math. II—Trigonometry, 4 recitations.....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Chemistry I—General.....	2 [1½]	Mech. Eng. V—Descriptive Geometry.....	1 [2]
Mech. Eng. I—Mechanical Drawing.....	[4]	Mech. Eng. III—Pattern Making.....	[2]
Mech. Eng. II—Forge and Foundry.....	[2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics II—Theory.....	1
Mil. Sci. and Tactics II—Theory.....	1	Physical Training.....	[1]
Physical Training.....	[1]		

MECHANICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.....	3	English III—Argumentation.....	2
Physics II—General.....	4	Physics II—General.....	4
Physics III—Laboratory.....	[1½]	Physics III—Laboratory.....	[1½]
Math. X—Calculus.....	5	Math. XI—Calculus.....	5
Mech. Eng. VIa—Mechanical Drawing	[2]	Mech. Eng. VIIb—Mechanical Drawing	[2]
Civil Eng. I—Surveying.....	1 [2]	Mech. Eng. XII—Mechanism.....	3
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics IV—Theory.....	1	Mil. Sci. and Tactics IV—Theory.....	1
Physical Training.....	[1]	Physical Training.....	[1]

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
Mil. Sci. and Tactics V—Theory.....	1	Mil. Sci. and Tactics V—Theory.....	3
English IX—Debating.....	[3]	Mech. Eng. IXb—Heat Engineering..	1½
Mech. Eng. VIII—Machine Drafting..	3	Mech. Eng. Xb—Applied Mechanics..	3½
Mech. Eng. IXa—Heat Engineering..	5	Mech. Eng. XI—Hydraulics.....	3
Mech. Eng. Xa—Applied Mechanics..	[3]	Mech. Eng. XIII—Valve Gears.....	[3]
Mech. Eng. XIV—Machine Shop.....	1 [1]	Mech. Eng. XIV—Machine Shop.....	[1]
Mech. Eng. XV—Experimental Engineering a.....	[1]	Mech. Eng. XVI—Experimental Engineering b.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training.....	[1]	Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Mech. Eng. XVIII—Experimental Engineering d.....	[2]
Mech. Eng. XVII—Experimental Engineering c.....	2 [1½]	Mech. Eng. XIX—Heating and Ventilation.....	1
Mech. Eng. XX—Machine Design.....	[3]	Mech. Eng. XX—Machine Design.....	[3]
Mech. Eng. XXI—Power Plants and Design.....	2 [1]	Mech. Eng. XXII—Assigned Work... or	3
Mech. Eng. XXII—Assigned Work... or	3	Mil. Sci. and Tactics VI—Theory...	
Mil. Sci. and Tactics VI—Theory.....	3	Mech. Eng. XXIII—Dynamics of Machines.....	2
Elec. Eng. I—Theory of Direct Currents.....	[1]	Mech. Eng. XXVI—Business Organization and Management.....	3
Mil. Sci. and Tactics I—Drill.....	[1]	Elec. Eng. IV—Theory of Alternating Currents.....	2
Physical Training.....	[1]	Elec. Eng. II—Direct Current Laboratory.....	[3]
		Mil. Sci. and Tactics I—Drill.....	[1]
		Physical Training.....	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

ELECTRICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.....	3	English III—Argumentation.....	2
Physics II—General.....	4	Physics II—General.....	4
Physics III—Laboratory.....	[1½]	Physics III—Laboratory.....	[1½]
Math. X—Calculus.....	5	Math. XI—Calculus.....	5
Mech. Eng. VIa—Mechanical Drawing	[2]	Mech. Eng. VIIb—Mechanical Drawing	[2]
Civ. Eng. I—Surveying.....	1 [2]	Mech. Eng. XII—Mechanism.....	[3]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics IV—Theory.....	1	Mil. Sci. and Tactics IV—Theory.....	1
Physical Training.....	[1]	Physical Training.....	[1]

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V—Theory.....	1	Mil. Sci. and Tactics V—Theory.....	[3]
English IX—Debating.....	3	Elec. Eng. II—Direct Current Lab....	2
Elec. Eng. I—Theory of Direct Currents.....	3	Elec. Eng. IV—Theory of Alternating Currents.....	3
Mech. Eng. VII—Machine Shop.....	[3]	Mech. Eng. IXb—Heat Engineering....	1½
Mech. Eng. IXa—Heat Engineering....	3	Mech. Eng. Xb—App. Mechanics.....	3½
Mech. Eng. Xa—App. Mechanics.....	5	Mech. Eng. XI—Hydraulics.....	1 [1]
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. XVI—Exp. Engineering b....	[1]
Physical Training.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
		Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Elec. Eng. V—Theory of Alternating Currents.....	3
Elec. Eng. V—Theory of Alternating Currents.....	3	Elec. Eng. VI—Alt. Current Lab....	[3]
Elec. Eng. VI—Alt. Current Laboratory.....	[3]	Elec. Eng. VII—Design of Electrical Machinery.....	[3]
Physics V—Electrical Meas.....	[1½]	Elec. Eng. VIII—Telephone Engineering.....	1
Physics VI—Prin. of Illumination.....	1 [1½]	Elec. Eng. X—Electric Power Transmission.....	4
Mil. Sci. and Tactics VI—Theory.....	[3]	Elec. Eng. XI—Electric Railways.....	2
Mech. Eng. XVII—Experimental Engineering c.....	2 [1½]	Elec. Eng. XII—Assigned Work....	[3]
Mech. Eng. XXI—Power Plants.....	2	or	
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics VI—Theory....	[1]
Physical Training.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
		Physical Training.....	[1]

CIVIL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.....	3	English III—Argumentation.....	2
Physics II—General.....	4	Physics II—General.....	4
Physics III—Laboratory.....	[1½]	Physics III—Laboratory.....	[1½]
Math. X—Calculus.....	5	Math. XI—Calculus completed.....	5
Civil Eng. I—Surveying.....	1 [2]	Mech. Eng. VIIb—Mechanical Drawing	[2]
Mech. Eng. VIa—Mechanical Drawing	[2]	Mech. Eng. VII—Machine Shop.....	[1½]
Mil. Sci. and Tactics I—Drill.....	[1]	Civil Eng. II—Topographic Surveying.	1 [2]
Mil. Sci. and Tactics IV—Theory.....	1	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training.....	[1]	Mil. Sci. and Tactics IV—Theory....	1
		Physical Training.....	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays..... } or Mil. Sci. and Tactics V—Theory..... }	3	History I—Industrial History..... } or Mil. Sci. and Tactics V—Theory..... }	3
English IX—Debating.....	1	Civil Eng. III ₂ —Railroad Engineering.....	3
Civil Eng. III—Railroad Engineering..	2 [3]	Civil Eng. V—Roads and Pavements..	3 [1]
Civil Eng. IV—Graphic Statics.....	2	Mech. Eng. Xb—Applied Mechanics..	1½
Mech. Eng. Xa—Applied Mechanics..	5	Mech. Eng. XI—Hydraulics.....	3½
Mech. Eng. IXa—Heat Engineering..	3	Mech. Eng. XVI—Experimental Engi- neering b.....	1 [1]
Mil. Sci. and Tactics I—Drill.....	[1]	Geology I.....	2
Physical Training.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
		Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Civil Eng. VIII—Bridge Design.....	[3]
Mech. Eng. XVII—Experimental En- gineering c.....	2 [1½]	Civil Eng. IX—Masonry.....	2 [1]
Civil Eng. VI—Bridge Details.....	[2]	Civil Eng. X—Reinforced Concrete..	2
Civil Eng. VII—Bridge Analysis.....	2	Civil Eng. XII—Water Supply.....	3
Civil Eng. XI—Sewerage.....	2	Civil Eng. XIV—Contracts and Speci- fications.....	2
Elec. Eng. I—Theory of Direct Cur- rents.....	3	Elec. Eng. IV—Theory of Alternating Currents.....	2
Civil Eng. XV—Assigned Work.... }	3	Civil Eng. XV—Assigned Work..... }	3
or Mil. Sci. and Tactics VI..... }	3	Mil. Sci. and Tactics VI..... }	3
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training.....	[1]	Physical Training.....	[1]

CHEMICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.....	3	English III—Argumentation.....	2
Physics II—General.....	4	Physics II—General.....	4
Physics III—Laboratory.....	[1½]	Physics III—Laboratory.....	[1½]
Math. X—Calculus.....	5	Math. XI—Calculus.....	5
Chemistry III—Qualitative Analysis..	[3]	Mech. Eng. XII—Mechanism.....	3
Mech. Eng. VIa—Mechanical Drawing	[2]	Chem. XXIII.....	[2]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics IV—Theory.....	1	Mil. Sci. and Tactics IV—Theory.....	1
Physical Training.....	[1]	Physical Training.....	[1]

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays..... } or Mil. Sci. and Tactics V—Theory.... }	3	History I—Industrial History..... } or Mil. Sci. and Tactics V—Theory.... }	3
English IX—Debating.....	1	Mech. Eng. Xb—Applied Mechanics..	1½
Mech. Eng. Xa—Applied Mechanics..	5	Mech. Eng. XI—Hydraulics.....	3½
Chemistry VII—Quantitative Analysis	[3]	Chemistry VIII—Quantitative Analysis	[5]
Chemistry XVIa—Industrial Chem- istry.....	3	Chemistry XII—Physical Chemistry alternating with	4
Chemistry IVa—Organic Chemistry....	3 [1]	Chemistry V—Organic Chemistry.. }	3
Mil. Sci. and Tactics I—Drill.....	[1]	Chemistry VI—Organic Chemistry....	[3]
Physical Training.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
		Physical Training.....	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Chem. XII—Physical Chemistry... }	4
Elec. Eng. I—Theory of Direct Currents.....	3	Chem. V—Organic Chemistry..... }	
Mech. Eng. IXa—Heat Engineering...	3	Chem. XX—Assigned Work..... }	3
Chem. XVII—Industrial Chemistry...	{3}	or	
Chem. XVIIb—Industrial Chemistry...	3	Mil. Sci. and Tactics VI—Theory...	2
Chem. XX—Assigned Work..... }	3	Chem. XXI—Reports and Discussions...	
or		Mech. Eng. IXb—Heat Engineering...	1½
Mil. Sci. and Tactics VI—Theory...	[1]	Mech. Eng. XXVI—Business Organization and Management.....	{3}
Mil. Sci. and Tactics I—Drill.....	[1]	Chem. XVII—Industrial Chemistry...	{3}
Physical Training.....		Chem. XXII—Organic or Physical Chemical Laboratory.....	{2}
		Mil. Sci. and Tactics I—Drill.....	{1}
		Physical Training.....	{1}

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Course in Applied Science

This course offers to the student opportunity to prepare either for teaching or for any one of several other distinct vocational pursuits, such as the application of botany, zoölogy, chemistry, and bacteriology to practical industrial problems. In these subjects, as well as in agriculture, the Vocational Science Course makes specialization possible. In addition, the course is so constructed that the student, although specializing, may come in touch with subjects that possess wider cultural significance and insure that broader outlook upon life which should characterize the educated man.

The general plan of the course is to give, primarily, a foundation in the sciences of chemistry, physics, and biology; also to give the student an acquaintance with history and literature and an efficient command of good English. The course offers, at the beginning of the Junior year, options in Agriculture, Biology, and Chemistry. One of these the student must select in addition to certain studies required of all. Opportunity either for further specialization within the option, or for gaining a broader training in unrelated studies is afforded thru a limited number of elective subjects. The electives may be in whole or in part in education in preparation for certification as teacher of science in general high school or of related science in vocational schools.

The nature and aim of these several options are as follows:

THE AGRICULTURAL OPTION

This option combines the broad scientific training of the Applied Science Course with the fundamental subjects given in the Agri-

cultural Course. It thus affords a basis for investigational work in subjects related to agriculture.

With the introduction of agriculture into the secondary and grade schools, there was created a demand for teachers and superintendents who had received, in addition to work in the sciences and education, training in the broad field of agriculture. This option therefore furnishes preparation in those fundamental subjects in Agronomy, Animal Husbandry, and Horticulture which will enable the graduates from this course acceptably to fill positions as instructors and principals of agricultural high schools or as superintendents of schools in rural communities.

THE BIOLOGICAL OPTION

The Biological Option offers training in the applications of biological science to the problems of modern life. The great growth of agricultural investigation in recent years has created a demand for trained workers in applied biology. In the state experiment stations and the federal government bureaus, opportunities are offered for the investigation of problems in plant physiology and pathology, economic entomology, animal nutrition and animal pathology. State and federal inspection of plants and animals, and the problems of the control of plant and animal diseases offer further opportunities for workers trained in biological subjects. The scope of public hygiene and sanitation is increasing each year and has created a growing demand for trained workers in federal, state, and municipal health service. In addition, such students are well equipped to undertake graduate work in other institutions, or to begin the study of medicine.

THE CHEMICAL OPTION

The subjects in Chemistry are designed to train the student in theoretical and descriptive inorganic and organic chemistry; to give him a working knowledge of the various branches of chemical analysis; and to familiarize him with the practical applications of chemistry. The course is well adapted to prepare students for teaching, for experiment-station work, for graduate work in chemistry, or for positions in industries which involve chemical processes. Such industries include the bleaching and dyeing of cotton, silk and wool, the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, paper, soap, paint and varnish, the refining of fats and oils; the metallurgical operations; the acid and alkali indus-

tries; the utilization of fuel by combustion or by destructive distillation to form gas, coke and tar, embracing the entire field of forest-products industries. In addition the course is intended to prepare particularly for the more specialized chemical industries such as the manufacture of chemicals and the manufacture and application of dyestuffs.

Freshman Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
German or French.....	3	German or French.....	3
Math. I—Algebra, 4 recitations.....	2½	Math. VIIIb.....	4
Math. II—Trigonometry, 4 recitations	2½	Chemistry II—General Chemistry and	3[1½]
Chemistry I—General.....	2[1½]	Qualitative Analysis.....	
Botany I—General.....	1[2]	Botany I—General.....	1[2]
Art II—Pencil Drawing.....	[1]	Mil. Sci. and Tactics II—Theory.....	1
Mil. Sci. and Tactics II—Theory... }	1	Mil. Sci. and Tactics I—Drill.....	[1]
or		Physical Training.....	[1]
Home Economics III—Hygiene.... }	1		
Mil. Sci. and Tactics I—Drill.....	[1]		
Physical Training.....	[1]		

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III.....	3	English III—Argumentation.....	2
Chemistry IVb—Organic.....	3 [1]	French or German.....	3
or		Chemistry XXIII or Elective.....	[2]
Chemistry III—Qualitative Analysis..	[3]	Geology I.....	2
French or German.....	3	Zoology X—Anatomy and Physiology..	2 [2]
Zoology X—General.....	2 [2]	Physics I—Descriptive.....	5
Botany II.....	2 [1]	Mil. Sci. and Tactics IV—Theory.....	1
Mil. Sci. and Tactics IV—Theory.....	1	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]	Physical Training.....	[1]
Physical Training.....	[1]		

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays..... }	3	History I—Industrial History..... }	3
or		or	
Mil. Sci. and Tactics V—Theory.... }	1	Mil. Sci. and Tactics V—Theory.... }	3
English IX—Debating.....		or	
Psych. and Ed. IV—General Psychology..	3	Psych. and Ed. III—Rhode Island Edu-	3
Mil. Sci. and Tactics I—Drill.....	[1]	cation.....	
Physical Training.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Options: A, B or C. All of the sub-		Physical Training.....	[1]
jects in one of the following groups		Options: A, B or C. All of the sub-	
must be chosen:		jects in one of the following groups	
		must be chosen:	
A. Agriculture		A. Agriculture	
Agronomy III—Soils.....	3 [1½]	Agronomy IV—Farm Crops.....	3 [1]
Horticulture I—Propagation of Plants.	1 [1]	Zoology IV—Economic Entomology..	3 [1]
Elective.....	3	Botany IV—Forestry.....	1 [1]
B. Biology		alternating with	
Zoology VIIa—Histology.....	3	Horticulture IV—Spraying and	
or		Pruning.....	3
Agronomy XI—Plant Breeding.... }	1 [4]	Elective.....	
Botany V—Plant Histology.....		B. Biology.	
Elective.....	3	Zoology VIIb—Embryology.....	2 [1]
		or	
		Zoology II—Field Zoology.....	[1½]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Junior Year—Concluded.

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
<i>C. Chemistry.</i>		<i>B. Biology—Concluded.</i>	
Chemistry VII—Quantitative Analysis.	[3]	Botany VI—Plant Pathology.....	1 [4]
Chemistry IVa—Organic.....	3 [1]	Zoölogy I—Invertebrate Zoölogy... }	1 [3]
Chemistry XVI—Industrial Chemistry.	3	or	
		Chemistry XIX—Physiological }	
		Chemistry.....	4
		Elective.....	3
		<i>C. Chemistry.</i>	
		Chemistry VIII—Quantitative Analysis.....	[5]
		Chemistry VI—Organic Laboratory.....	[3]
		Chemistry XII—Physical Chemistry }	
		alternating with	
		Chemistry V—Advanced Organic... }	4

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	English V—Shakespeare.....	3
Psy. and Ed. II—Prin. of Education...	3	Psy. and Ed. I—History of Education.....	3
Mil. Sci. and Tactics VI—Theory... }	3	Mil. Sci. and Tactics VI—Theory... }	3
or		or	
Elective.....	[1]	Elective.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training.....	[1]	Physical Training.....	[1]
Options: A, B or C. All of the subjects in one of the following groups must be chosen :		Options: A, B or C. All of the subjects in one of the following groups must be chosen :	
<i>A. Agriculture.</i>		<i>A. Agriculture.</i>	
An. Hus. XIV—Poultry.....	[2]	Horticulture II—Vegetable Gardening.	2
Horticulture X—Pomology.....	1 [2]	Animal Husbandry IV—Breeding....	3
Horticulture XVI—Landscape Gardening.....	1 [2]	Animal Husbandry VI—Feeding.....	3
<i>B. Biology.</i>		<i>B. Biology.</i>	
Agronomy XI—Plant Breeding.... }	3	Chemistry XIX—Physiological Chemistry.....	4
or		or	
Zoölogy VIIa—Histology.....	[3]	Zoölogy I—Invertebrate Zoölogy....	1 [3]
Assigned Biological Work.....	3	Assigned Biological Work.....	3
<i>C. Chemistry.</i>		Zoölogy II—General.....	[1½]
Chemistry XVII—Industrial Chemistry.....	[3]	Zoölogy VIIb—Embryology.....	1 [2]
Chem. XVIb—Industrial Chemistry..	3	<i>C. Chemistry.</i>	
Chemistry XX—Assigned Work.....	3	Chemistry V—Advanced Organic... }	4
		alternating with	
		Chemistry XII—Physical.....	
		Chemistry XVII—Industrial Chemistry.....	3
		Chemistry XXI—Reports and Discussions.....	2
		Chemistry XXII—Organic or Physical Chemical Laboratory.....	[2]
		Chemistry XX—Assigned Work.....	2

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Course in Home Economics

The object of the home economics course is to fit young women for home making and to provide adequate training for teaching the various household arts. Nowhere is the application of modern science to everyday life more important than in the home. In no

other life-work do women find greater need of scientific knowledge and technical skill than in the intelligent and economic administration of household affairs.

The course includes instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene; and instruction in the care of infants and young children. During the entire course instruction is given in hand sewing, machine practice, and in drafting, cutting, and making garments. Attention is given to planning the wardrobe and remodeling garments. Altho the main work is scientific and technical, the importance of artistic and literary training for home life has not been neglected. It is recognized that all the knowledge of right living is needed to assist the student to a broader conception of citizenship as well as in performing the manifold duties of daily life.

Opportunities are greater and more varied today for women trained in home economics than for those trained in any other one line. Besides teaching, a profession which is chosen by many, there are excellent openings in institutional management, lunch-room and tea-room work, which vary according to the type of institution selected. The demand for hospital dietitians is greater than can be met. There is also a growing demand on the part of the industries for trained women scientists. In view of this demand opportunity to take special courses in chemistry and bacteriology will be offered during the junior and senior years to approved students who wish to fit themselves for such work. Such preparation will qualify the student along the following lines: special research work on problems involving chemistry or bacteriology as applied to food analysis, federal and municipal inspection, analytical work in experiment stations and technical laboratories, and chemistry as applied to textile analysis.

Regular students are expected to take the course as outlined below, with choice of electives; but when entered in other courses in the college they may elect certain work in the home economics department, under direction of the head of the department. Electives in education and practice teaching prepare for State certification as teachers for high schools and other vocational schools. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*	
English I—Rhetoric and Composition.	3	English I—Rhetoric and Composition.	3	
Chemistry I—General Chemistry....	2 [1½]	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]	
Botany I—General.....	2 [2]	Botany I—General.....	2 [2]	
Home Economics III—Hygiene.....	1	Art XII—Drawing and Design.....	[3]	
Home Economics I—Garment Making.	1 [2½]	Home Economics I—Garment Making.	1 [2½]	
Physical Training.....	[1]	Physical Training.....	[1]	
Options: A or B. Both subjects in one of the following groups must be chosen:				
A.				
Math. III—Algebra, 4 recitations....	2½	Music II—Harmony and Appreciation of Music.....		
Math. II—Trigonometry, 4 recitations.	2½			
B.				
English VI—Literature and Composition.....	2	<i>Electives†</i>		
Music I—Elementary Harmony and History of Music.....	3			

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English II—Newspaper Work.....	1	English III—Argumentation.....	2
Modern Language.....	3	English VIII—Interpretive Reading.	1
Chemistry IVb—Organic.....	3 [1]	Modern Language.....	3
History III—Modern European History.....	3	Physics I—Descriptive.....	5
Zoology X—General.....		Home Economics XVIII—Dressmaking.....	1 [2]
Home Economics IV—Foods.....	[3]	Zoology X—Physiology and Anatomy.	1 [2]
Home Economics XVIII—Dressmaking.....	[2]	Home Economics IV—Foods.....	[3]
Physical Training.....	[1]	Home Economics XXVII—Applied Household Mechanics.....	1 [1]
<i>Elective.</i>		Physical Training.....	[1]
Music.....	2	<i>Elective.</i>	
		Music.....	2

Another elective may be substituted if the schedule permits.

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
Psy. and Ed. IV—General Psychology.	3	Chemistry X—Food Analysis.....	4
Home Economics IX—Home Economics.....	3	Chemistry XIX—Physiological.....	
Home Economics VII—House Planning and Sanitation.....	1 [1]	Art VIII—Architectural Drawing and Interior Decoration.....	[2]
Art XI—Costume Design.....	[2]	Home Economics XVIII—Dressmaking.....	[2]
Physical Training.....	[1]	Home Economics XII—Home Nursing and Care of Children.....	1 [1]
Elective.....	6	Physical Training.....	[1]
Bacteriology I—General.....	1 [2]	Elective.....	7
<i>Electives.</i>		<i>Electives.</i>	
Zoology VIIIa—Histology.....	3	Zoology VIIIb—Embryology.....	3
		Home Economics VII—Cookery for Special Occasions or Lunch-room Cookery.....	[2]

Other electives may be substituted for the above if the schedule permits.

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

† Electives in this term are to be taken only by those students having advance credit.

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	5	English V—Shakespeare.....	3
English XI—American Poetry.....	2	Chemistry X—Food Analysis.....	2
Art III—History of Art.....	3	alternating with	
Home Economics XXVI—Textiles and Clothing Economics.....	[2]	Chemistry XIX — Physiological Chemical.....	4
Home Economics XXI—Home Ad- ministration.....	[3]	Psy. and Ed. I—History of Educa- tion.....	3
Physical Training.....	[1]	Home Economics VIII—Dietetics....	2 [1]
Elective.....	6	Home Economics XXV—Costume Design.....	[3]
<i>Electives.</i>		Physical Training.....	[1]
Bacteriology II—Advanced.....	1 [3]	Electives.....	[3]
Vocational Education V—Teaching Home Economics.....	1 [1]	<i>Electives.</i>	
		Bacteriology II—Advanced.....	[4]
		Vocational Education V—Teaching Home Economics.....	1 [1]

Other electives may be substituted if the schedule permits.

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Education Courses

The requirement for entrance to the courses leading to the degree of Bachelor of Education is graduation from an approved normal school which requires at least two years of professional and academic study and the entrance requirements of which are equal to those of this college.

By arrangement with Rhode Island College of Education, graduates of that institution will be enrolled in this course upon the recommendation of the principal. The course is of two years' duration and offers three optional lines of work, viz.: Agriculture, Home Economics and Science. The work is so arranged as to give in the shortest time possible training in the fundamental sciences, together with a comparatively large amount of professional work in the option chosen.

The Agricultural option offers an excellent opportunity to graduates of theological courses and teachers who are planning to take up work in rural communities to broaden their education in such a way as to enable them more completely to understand the problems of those with whom they intend to work.

The Science option gives a comprehensive foundation in Mathematics, Chemistry, Botany, Zoölogy, Physics and Bacteriology, and also gives an opportunity to specialize to some extent in one of these. Those who take this course will be prepared to teach science in the schools of the State.

The Home Economics option offers the fundamental subjects in household arts and the closely allied sciences which will prepare the student to teach these subjects in the schools of Rhode Island. The course listed below will be given so far as the schedule will permit.

AGRICULTURE

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Math. III—Algebra, 4 recitations....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Math. II—Trigonometry, 4 recitations	2½	Botany I—General.....	1 [2]
Chemistry I—General.....	2 [1½]	Animal Husbandry I—Stock Judging.	[2]
Botany I—General.....	1 [2]	Animal Husbandry III—Breeds.....	2
Botany III—Trees and Shrubs.....	[1]	Horticulture II—Vegetable Gardening.	2
Agronomy II—Forage Crops.....	2	Horticulture IV—Spraying and Pruning.....	1 [1]
Animal Husbandry XIIa—Poultry....	1	Botany III—Trees and Shrubs.....	[1]
Horticulture XVI—Landscape.....	1 [2]	Geology I.....	2
Physical Training.....	[1]	Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Chemistry IVa—Organic.....	3 [1]	Chemistry XIV—Agricultural Chemistry.....	4
Botany II—Crops and Weeds.....	1 [2]	Physics I—Descriptive Physics.....	5
Zoölogy X—General Zoölogy.....	2 [2]	Zoölogy X—Anatomy and Physiology..	2 [2]
Animal Husbandry VI—Feeds and Feeding.....	3	Agronomy IV—Farm Crops.....	3 [1]
Agronomy III—Soils and Fertilizers...	4 [1½]	Horticulture XVII—Small Fruits....	2 [1]
Horticulture III—Fruit Culture.....	3	Physical Training.....	[1]
Physical Training.....	[1]		

SCIENCE

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Math. I—Algebra, 4 recitations.....	2½	Mathematics VIIla—Analytics.....	4
Math. II—Trigonometry, 4 recitations	2½	or	
Chemistry I—General.....	2 [1½]	Mathematics VIIlb—Analysis.....	5
Botany I—General.....	1 [2]	Chemistry II—General Chemistry and Qualitative Analysis.....	[1½]
Zoölogy X—General Zoölogy.....	2 [2]	Botany I—General.....	1 [2]
Modern Language.....	3	Zoölogy X—Anatomy and Physiology..	2 [2]
Physical Training.....	[1]	Geology I.....	2
		Modern Language.....	3
		Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Physics II—General.....	4	Physics II—General.....	4
Physics III—Laboratory.....	[1½]	Physics III—Laboratory.....	[1½]
Chemistry IVa—Organic.....	3 [1]	Zoölogy I—Invertebrate Morphology..	1 [3]
or		Botany III—Trees and Shrubs.....	[1]
Chemistry III—Qualitative.....	[3]	Physical Training.....	[1]
Botany III—Trees and Shrubs.....	[1]	Elective.....	9
Bacteriology I—General Systematic..	1 [2]		
Physical Training.....	[1]		
Elective.....	6		

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

HOME ECONOMICS

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Chemistry I—General.....	2 [1½]	Botany I—General.....	1 [2]
Zoölogy X—General.....	2 [2]	Chemistry II—General Chemistry and Qualitative Analysis.....	3 [1½]
Botany I—General Botany.....	1 [2]	Zoölogy X—Physiology and Anatomy..	2 [2]
Home Economics I—Garment Making..	1 [2½]	Art XII.....	2 [3]
Home Economics IV—Foods.....	[3]	Home Economics I—Garment Making..	1 [2½]
Histo y III—Modern.....	3	Home Economics IV—Foods.....	[3]
Physical Training.....	[1]	Home Economics XXVII—Applied Household Mechanics.....	1 [1]
		Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I.....	3	Home Economics VII—House plan- ning.....	1 [1]
Vocational Ed. V—Home Economics Teaching.....	3	Home Economics XII—Nursing.....	1 [2]
Home Economics VIII—Dietetics....	2 [1]	Home Economics XVIII—Dressmak- ing.....	[2]
Home Economics IX—Sanitatio.....	2	Home Economics XXI—Home Ad- ministration.....	1 [3]
Home Economics XVIII—Dressmak- ing.....	[2]	Zoölogy VIIIb—Embryology.....	3
Chemistry IVa—Organic.....	3 [1]	Physical Training.....	[1]
Bacteriology I—General Systematic...	1 [2]	Elective.....	6
Physical Training.....	[1]		

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Teacher Training Courses in Vocational Education

A law passed by the sixty-fourth Congress and signed by the President, February 23, 1917, provides for coöperation between the Federal Government and the several States in the advancement of vocational education in the fields of agriculture, home economics, and trades and industries. In order to receive the benefits of this law, which is known as the Vocational Education Act, it is necessary that the State shall, through the legislative authority thereof, accept the provisions of the Act and create or designate a State Board for Vocational Education, which shall have charge of the administration of this act. Under the supervision of the State Board, there shall be established vocational courses of less than collegiate grade for persons over fourteen years of age who have entered or are preparing to enter upon the line of vocational work in which they desire to receive instruction.

The Act also establishes a fund which shall be used for training of teachers, supervisors and directors of the vocational work. In order to carry out the provisions of the Act in so far as the training of

teachers in agriculture and home economics and teachers of related subjects in trades and industries is concerned, an agreement has been entered into between the State Board for Vocational Education and the Board of Managers of the Rhode Island State College, whereby teacher training courses for agriculture, home economics and related subjects in trades and industries shall be given at the college.

The courses as outlined are of four years' duration, and upon completion the graduates therefrom receive the Bachelor of Science degree. Requirements for entrance to these courses are the same as to the other four-year degree courses. (See pp. 33-40.)

According to a ruling of the Federal Board for Vocational Education, and the requirements of the State plan for training teachers, it will be necessary for all candidates for positions as teachers, supervisors or directors of vocational work to have had a certain amount of practical experience in the line of work in which a position is sought before such position can be obtained.

Agriculture

See pages 17 and 18.

Teacher Training Course in Home Economics

Freshman Year

Same as Home Economics Course, freshman year, page 27.

Sophomore Year

Same as Home Economics Course, sophomore year, page 28.

Junior Year

FIRST TERM		CREDITS*	SECOND TERM		CREDITS*
English IV—Modern Essays.....		3	History I—Industrial History.....		3
Psy. and Ed. IV—General Psychology..		3	Chemistry X—Food Analysis.....		4
Home Economics VIII—Dietetics....		3	alternating with		
Home Economics IX—Sanitation.....	1 [1]		Chemistry XIX—Physiological....		
Art XI—Design.....	[2]		Art VIII—Arch. Drawing.....	[2]	
Physical Training.....	[1]		Home Economics XVIII—Dressmak-		
Electives.....	6		ing.....	[2]	
A.			Home Economics VII—House Plan-		
			ning.....	1 [1]	
Bacteriology I—General Systematic..	1 [2]		Home Economics XII—Home Nursing		
Zoölogy VIIIA—Histology.....	3		and Care of Children.....	1 [1]	
Other electives may be substituted if the			Psy. and Ed. I—History of Education.		3
schedule permits.			Physical Training.....	[1]	
Bacteriology I must be elected in the Junior			Elective.....	2	
year.			Any second-term elective offered in the		
			Home Economics Course.		

GROUP A

The school year is reckoned at thirty-six weeks, the minimum length.

English.....	108 weeks.....	3 units.
Modern Language—other than English . . .	72 weeks.....	2 units.
Algebra—for engineering and applied science students, 54 weeks.	1½ units.	
Algebra—for agricultural and home economics students, 36 weeks.	1 unit.	
Geometry, Plane.....	36 weeks.....	1 unit.
Geometry, Solid—for engineering students only, 18 weeks.	½ unit.	
Physics or chemistry.....	36 weeks.....	1 unit.
History.....	36 weeks.....	1 unit.

The remainder of the fourteen units must be taken from

GROUP B *

No subject is accepted for more than the amount here stated or for less than one-half of a unit.

Foreign Language.....	216 weeks.....	6 units.
Geometry, Solid—for other than engineering students, 18 weeks.	½ unit.	
Botany.....	36 weeks.....	1 unit.
Algebra—for students in agriculture and home economics, 18 weeks. . .	½ unit.	
Chemistry.....	36 weeks.....	1 unit.
Geology.....	18 weeks.....	½ unit.
Physiography.....	36 weeks.....	1 unit.
Physiology.....	18 weeks.....	½ unit.
History.....	108 weeks.....	3 units.
Drawing.....	36 weeks.....	1 unit.
Domestic Science.....	18 weeks.....	½ unit.
Shop Practice.....	18 weeks.....	½ unit.
Farm Practice.....	18 weeks.....	½ unit.
Agriculture.....	72 weeks.....	2 units.

REGISTRATION

Registration occurs on the first day of each term, from 9 A. M. to 12 M., and from 1 P. M. to 4 P. M. A special fee of one dollar per day will be charged for registration after the first day of each term.

A fee of one dollar per day is charged for absence immediately preceding or following a holiday or vacation.

Each student is required to sign the following form of application before registering for the current year:

I hereby make application for registration as a student in Rhode Island State College for the year. In consideration of such regis-

* Other subjects not here named will receive due consideration if presented on the application blank, with a statement of the work done.

tration and the attendance consequent thereupon, I hereby engage and obligate myself cheerfully to observe and conform to the rules of said college, having specifically in mind, without excluding others, that in relation to hazing and class disturbances. I further engage promptly and on my own motion to withdraw from the college whenever I find myself unable or unwilling to carry out the obligation herein assumed.

METHODS OF ADMISSION

On any or all of the subjects named in both groups, satisfactory standings from any reputable high school will be accepted in lieu of examination, on presentation of a copy of the student's full record in the high school showing clearly the nature of the work pursued in each subject, time devoted to it, and grade of work done. This copy must be duly signed by the proper official of the school, and must be accompanied by a certificate of good moral character. The latter, however, may be from any reputable source. On application, blanks showing definitely the full nature of the information desired from the high school will be furnished.

Candidates not presenting satisfactory standings from reputable high schools will be examined, over ground corresponding to the number of units attached, on all the subjects of Group A and on such of Group B as they may offer. Examinations for entrance will be held at the opening of the college year in September, as announced in the calendar, page 8.

SPECIFICATIONS OF GROUND TO BE COVERED*

GROUP A

These subjects, with the exception stated, are required of all students to the extent indicated by the number of units designated in each case.

Languages

ENGLISH, 3 UNITS.—In English two aims are sought: first, a knowledge of the language—including the acquisition of an ample vocabulary and power of effective expression—second, some acquaintance with the literature. To attain the

* For any or all of the subjects described below the requirements of the College Entrance Examination Board, upon which these specifications are largely based, will be accepted. A circular stating these requirements in detail and blank forms of application for examination may be obtained by sending ten cents in stamps to the College Entrance Examination Board, Post Office Sub-Station 84, New York City.

first, grammar and composition must be thoroly studied. Thruout the secondary-school course there should be much practice in writing along a variety of lines suggested by the pupil's experience, his general interests, and studies other than English. Spelling, punctuation, accuracy of idiom, should receive due attention in all written work; while correct and forceful oral expression should also be insisted upon.

To meet the requirement in literature certain selections are to be made from two lists of works—one for reading, the other for closer study. It is hoped to foster in this way a taste for good books and an intelligent appreciation of them. Committing to memory selected passages and reading aloud are strongly urged. In all cases some knowledge of the author's life and his place in literature should be acquired, while a more exacting study of selected texts would lay emphasis on form and style, meaning of particular words and phrases, and the significance of allusions. The list of books prescribed for 1921-22 may be obtained from the nearest high-school principal.

ELEMENTARY GERMAN, 2 UNITS.—During the first year the work should consist of drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. During the second year the course should be a continuation of the first as regards grammar, composition, and conversation. The reading should consist of at least 200 pages of such texts as Arnold's *Fritz auf Ferien*, Wildenbruch's *Das Edle Blut*, Mosher's *Willkommen in Deutschland* and Benedix' *Der Prozess*.

ELEMENTARY FRENCH, 2 UNITS.—The course in French should parallel that in German. During the first year there should be drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. Thruout the second year the course should be a continuation of the first as regards grammar, composition, and conversation. At least 250 pages of such texts as Bruno's *Le Tour de la France*, Malot's *Sans Famille*, Mérimée's *Colomba*, Sarcey's *Le Siège de Paris*, and Hugo's *La Chute* should be read.

ELEMENTARY SPANISH, 2 UNITS.—The course in Spanish should parallel those of German and of French in regard to the nature, amount, and quality of the work accomplished in both years. The reading in the second year should consist of at least three hundred pages from such texts as Carrion y Vital Aza—*Zaragüeta*; Gutierrez—*El Trovador*; Taboada—*Cuentos Alegres*; Alarcón—*El Capitán Veneno*; Galdós—*Electra*; Valdés—*La Hermano San Sulpicio*.

Mathematics

ALGEBRA, $1\frac{1}{2}$ UNITS.—The requirement in algebra comprises the four fundamental operations; factoring; highest common factor and lowest common multiple; fractions; linear equations; exponents; radicals; quadratic equations; simultaneous equations involving quadratics; binomial theorem for positive integral exponents. Problems should be given at frequent intervals. Candidates for the courses in Agriculture and Home Economics are required to offer but one unit for this work.

PLANE GEOMETRY, 1 UNIT.—This requirement is met by the usual theorems and constructions of standard text-books, numerous originals, and applications.

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—The ground is covered by the usual theorems and constructions of standard text-books, originals, and applications.

Science

PHYSICS, 1 UNIT.—This course should consist of class-room work based on a standard text-book, accompanied by lecture-table demonstrations and by numerous practical problems. A parallel course in individual laboratory work is desirable, but is not absolutely required. In the case of laboratory work, one hour of credit will be allowed for each two hours spent in the laboratory.

CHEMISTRY, 1 UNIT.—An elementary text-book, such as William's Elements of Chemistry, or First Principles of Chemistry, by Brownlee and others, should be covered by recitations. At least one exercise per week must be devoted to individual work in the laboratory. The pupil must perform forty or more experiments, such as are described in the Report of the College Entrance Examination Board, 1919, and keep a notebook in which he describes the apparatus used, records the phenomena observed, and states the conclusions in his own words, in each experiment.

History

HISTORY, 1 UNIT.—The requirement in history will be met by presenting any one of the following subjects: ancient history, especially Greek and Roman, with the chief events of the early Middle Ages to the death of Charlemagne (814); medieval and modern European history from 814 to the present time; English history; American history and civil government.

GROUP B

From this group units are to be taken, in addition to those of Group A, sufficient to make up the whole number required. Any combination of units, including fractions not less than one-half, will be allowed.

Languages

GERMAN, 2 UNITS.—The requirement for Elementary German is indicated under Group A. One unit will also be allowed for third and one for fourth year work. Third-year study should emphasize reading and advanced composition. Suitable texts are Riehl's *Der Fluch der Schönheit*, Freytag's *Bilder aus der deutschen Vergangenheit*, Lessing's *Minna von Barnhelm*, Schiller's *Wilhelm Tell*, and Heine's *Die Harzreise*. The fourth year's work should mark a decided advance in the mastery of vocabulary and idioms shown both in speaking and writing. The works may be made the basis for themes. The following reading matter is suggested: Freytag's *Soll und Haben*, Fulda's *Der Talisman*, Hauff's *Lichtenstein*, Scheffel's *Ekkehard*, Schiller's *Wallenstein*, *Maria Stuart*, or *Geschichte des dreissigjährigen Krieges* (Book III), Dahn's *Ein Kampf um Rom*, Goethe's *Dichtung und Wahrheit* (Books I-IV). At least 500 pages should be read.

FRENCH, 2 UNITS.—The requirement for Elementary French is indicated under Group A. One unit will also be allowed for third and one for fourth year work. In third year emphasis should be laid on reading. Some time ought also to be given to advanced composition. Among suitable texts may be mentioned Racine's *Athalie*, Corneille's *Le Cid*, Molière's *Le Bourgeois Gentilhomme*, Sandeau's *Mademoiselle de la Seiglière*, Vigny's *La Canne de Jonc*. From the fourth year's study increased facility in conversation and composition should be gained, and any modern French, other than technical, should be read with ease. Such texts as the following are recommended: the prose works of Dumas père, Hugo's *Ruy Blas*, La Fontaine's *Fables*, Saint Beuve's *Essays*, Taine's *Origines de la France Contemporaine*, Pellissier's *Mouvement Littéraire au XIX^e Siècle*. From 600 to 1,000 pages should be read.

SPANISH, 2 UNITS.—The requirement for Elementary Spanish is indicated under Group A. One unit will also be allowed for third and one for fourth year work. Third year study should emphasize reading, advanced composition, free reproduction, both orally and in writing, of the texts read. The reading should consist of at least four hundred and fifty pages from such texts as Valdés's *La Alegría del Capitán Ribot*; Alarcón's *El Niño de la Bola*; Valera's *El Comendador Mendoza*; Bretón de los Herreros's *¿Quién es Ella?*; Becquer's *Legends and Tales*; Sanz's *Don Francisco de Quevedo*; Caballero's *El Servilón y un Liberalito*; Gily Zarate's *Guzmán el Bueno*.

The fourth year's work should show an increased facility in reading, composition and conversation. The reading should consist of from six hundred to one thousand pages of such texts as Blasco-Ibañez's *la Barraca*; Nuñez de Arce's *El Haz de Leña*; Tamayo y Baus's *Un Drama Nuevo*; Ayala's *Consuelo*; Avelleda's *Baltasar*; Echegaray's *El Gran Galeoto*; Pereda's *Pedro Sánchez*; Valera's *Pepita Jiménez*; Pardo Bazan's *Pascual López*.

LATIN, 1 TO 4 UNITS.—A credit of one unit will be given for each year's work in Latin, covering in all a standard beginner's book, four books of Cæsar's Gallic War, six orations of Cicero and six books of Virgil's *Æneid*. It is expected that work in prose composition and sight reading will be included in each subject.

Mathematics

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—See Group A for other than engineering students.

Science

BOTANY, 1 UNIT.—The preparation in Botany should include individual laboratory work recorded by notes and diagrammatic drawings. Field work is desirable, and should also be accompanied by notes. The year's course of study should consist of three parts, viz.: 1. The general principles of the anatomy, morphology, physiology, and ecology of seed plants. 2. The natural history of the plant groups. The structure, reproduction, and adaptations to habitat of one or two types from each group should be studied. 3. Classification. A brief study of the subdivisions of the above groups. Ability to determine species of flowering plants is not essential. Any standard text-book covering the above field may be used.

GEOLOGY, $\frac{1}{2}$ UNIT.—In Geology, a study of the following subjects should be made: rock-forming minerals, their names and chemical constituents; earthquakes—their cause and effects; volcanoes—distribution, types, character of eruption, nature of erupted material; supposed physical state of the earth's interior; surface agencies destructive to rocks, with brief illustrations; processes of re-construction, with illustrations; rocks—classification, according to origin, rock fracture and dislocation, rock structure due to erosion, matamorphic rocks, mineral veins and their method of formation; conditions determining land sculpture; the geological periods, with land elevations, and the characteristics of climate, plant and animal life of each period.

PHYSIOGRAPHY, 1 UNIT.—This course should include a consideration of the earth as a globe, the atmosphere, the waters of the earth, the lands, life upon the earth, and the reactions between these elements. Special attention should be given to the questions of climate, the winds, the weather, tides, ocean currents, and to the effect of the ocean in modifying climatic conditions. Attention should be directed to the manner in which the land was originally formed and to the way in which the original formation has been and is being modified by the action of erosion, the winds, and frost. Thruout the course consideration should be given to the manner in which the various physical characteristics of the earth have affected life upon its surface.

PHYSIOLOGY, $\frac{1}{2}$ UNIT.—The text-book work should cover material equivalent to that of Martin's Human Body or Hough and Sedgwick's Human Mechanism. In addition the applicant should present a notebook, showing laboratory work on the elementary physiological processes and general structure of mammals.

ZOÖLOGY, 1 UNIT.—The work should include: 1. The general natural history of a number of common vertebrates and invertebrates of the locality where the work is given. 2. The classification of these forms into phylum, class and order, with the characteristics of the several groups. 3. The main anatomical features of one vertebrate, two arthropods (one an insect); an annelid, preferably the earthworm, a coelenterate, two protozoans (*Amœba* and *Paramœcium* recommended). 4. The general physiology of the above types involving digestion, absorption, circulation, excretion, and nerve function. These should be compared with the same functions in the human body. 5. The following subjects should be brought before the student in connection with the foregoing studies: a sexual and sexual reproduction, alternation of generations, regeneration, fertilization and segmentation of egg cells, adapation, variations, evidences of relationship between similar groups, and the cell structure of animals.

Certified notebooks must be presented, which include notes upon work and discussion in class-room and drawings of the forms dissected.

History, 1 unit

See Group A.

Drawing

DRAWING, 1 UNIT.—This may be either freehand or mechanical. If freehand drawing is offered, the candidate should submit at least fifteen drawings, the majority to be in pencil, certified as his work by the instructor. These should show

ability to sketch from various objects with considerable accuracy of proportion and clearness of line, and a fair understanding of the rules of perspective and light and shade as applied in freehand sketching. A candidate may also present the equivalent of five hours per week for one year in elementary mechanical drawing, lettering, or sketching from models.

Domestic Science

DOMESTIC SCIENCE, 1 UNIT.—In domestic science the student must present satisfactory evidence of knowledge in the following subjects: the use and care of the kitchen equipment, general cleaning processes, the marketable forms of staple foods. She must also show credit for at least twelve cooking laboratory lessons of two hours each.

Shop Practice

SHOP PRACTICE, $\frac{1}{2}$ UNIT.—The candidate may offer carpentry or any of the various forms of bench-work given in a well-equipped manual training school, equivalent to five hours per week for one-half year.

Farm Practice

FARM PRACTICE, $\frac{1}{2}$ UNIT.—By "farm practice" is meant familiarity with the operations of the farm, such as the harnessing of teams, the use of tillage implements, and the care of dairy animals.

Degrees

The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 16–32. The degree of Bachelor of Education is conferred upon a student who has completed one of the educational courses outlined on pages 29–31. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satisfactory thesis in applied or economic science, and upon passing examinations in the subjects pursued. Candidates not graduates of this college must file with the committee on graduate study, not later than October first, a detailed statement of their previous work, certified by the proper authorities. They must select, not later than November fifteenth, a major and a minor subject which must be closely related and have the approval of the committee on graduate study and of the professor in whose department the principal work is done. Major subjects may be selected in any of the following departments: agriculture; botany; chemistry; zoölogy; bacteriology; home economics; electrical, mechanical and civil engineering. The minor may be selected from

advanced undergraduate subjects outlined in the catalog; the major, however, must be advanced work specially arranged with the individual professor.

The requirements for the degree of Mechanical Engineer, Electrical Engineer, or Civil Engineer, consist of three years of successful professional practice, subsequent to the Bachelor's degree, one of which must have been in a responsible position; the presentation of an acceptable thesis; and the passing of examinations upon the investigations involved in the thesis. The requisites for the degree of Master of Agriculture are the same as for the engineering degrees, except that five years of professional practice are required.

A fee of five dollars is charged for registration for an advanced degree. Students from outside the state pay a tuition fee of fifty dollars during the year of residence. The cost of a diploma is five dollars. The thesis for all the advanced degrees must be typewritten, upon paper of the size and quality prescribed, and two copies must be in the hands of the president not later than June first.

A fee of five dollars is charged for registration for an advanced degree. Students from outside the State pay a tuition fee of fifty dollars during the year of residence. The cost of a diploma is five dollars.

Teachers' Certificates

The following resolution adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island College will be received as evidence of the required qualifications in scholastic subjects for professional teacher's certificate valid in public secondary schools."

Rhode Island State College also offers professional courses in all subjects required by the State Board of Education for a professional teacher's certificate, and graduates of the college who have completed all the subjects in psychology and education will be accredited in full for a teacher's certificate of professional rank. By arrangement with the State Board for Vocational Education courses at Rhode Island State College are planned to prepare students to meet the requirements set up for teachers of agriculture, home economics, and related subjects in trade and industry.

By action of the Regents of the State of New York, taken June 9, 1910, the degrees of B. S. and M. S. from this college are accepted as a basis for the issuance of licenses to teach in that state.

Reserve Officers' Training Corps

There is an increasing demand thruout the country for teachers of high-school grade who are able to give military instruction, so that students of Applied Science who can take the military training prescribed for the Officers' Reserve Corps will be adding an important asset to their professional equipment.

Expenses

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is \$25.00 a term, or \$50.00 a year. Students who apply for admission as non-residents will be expected to pay tuition thruout their course unless there is a bona-fide change of residence of the parent or guardian.

The regular college expenses are tabulated as follows:

Board, \$6.00 per week (subject to change without notice).....	\$216 00
Room-rent, including heat and light.....	40 00
Incidental fee, \$5.00 per term.....	10 00
Student tax for Beacon, outside lectures, athletics, etc.....	10 00
Laboratory expense, \$5.00 per term, estimated.....	10 00
	\$286 00

The first four items must be paid quarterly in advance; that is to say, from boarding students, \$60.00 will be required at the opening of the year, September 20, 1921, and on November 22, 1921; also at the opening of the second term in February, and again at the beginning of the fourth quarter. Non-residents of the state should add to this sum \$12.50 for tuition each quarter. Day students will be required to make a deposit of \$5.00 for laboratory expense together with the incidental fee and student tax, making a quarterly payment of \$10.00 in advance on the above dates. In order to secure dormitory accommodations, the student is required to deposit \$10.00 with the application, the amount to be credited on the room rent for the first quarter. If the student fails to take the room, the deposit is forfeited. During vacations dormitories and fraternity houses will not be open for occupancy except under special arrangements with

the college office. In such case, a higher rate for room rent will be charged, such rate to be adjusted on individual application. During 1920-21, the students assessed themselves an additional \$10.00 for student tax covering various activities, making a total of \$20.00. The item of laboratory expense includes all material used in the various laboratories, and the destruction, breakage, or marring of apparatus and tools, and must be paid when bill is presented at the close of each term.

The probable cost of books will be from \$30.00 to \$50.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from \$10.00 to \$25.00. A fee of 50 cents will be charged for each second examination to make up a condition. Graduates pay the cost of diplomas, \$5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter.

TRANSPORTATION.—The college conveys day-students to and from the railroad station free of charge. Once at the beginning and end of each term, trunks will be conveyed to and from the station for students living in dormitories under college control.

BOARDING STUDENTS.—The deposit for board for 1920-21 is at present fixed at \$6.00 per week. At the end of each term, the student will be charged, pro rata, the cost of board in excess of deposit or, if the cost falls below deposit, a rebate will be allowed. Owing to the uncertainty of prices for all forms of provisions and labor, the right is reserved to make change in the rate of board at such times as may appear necessary to do so. It is, however, guaranteed that board will be furnished students at cost. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the use of such ticket. No rebate will be allowed except by special permission for absence over a considerable period because of illness or other serious cause. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance. Arrangements for room or board outside of the College must be approved by the executive office. Students are not allowed to board themselves in the dormitories.

CASES OF ILLNESS.—Arrangements for ascertaining and handling cases of illness are as follows: Each floor of the dormitory and each house has a student officer, called a monitor, appointed and paid by the college. A part of his duties is to report cases of illness. The room-mate also reports such illness to the student head-waiter in the dining room, who sends the meal to the room, for which a charge of fifteen cents is made, and reports his action to the office, where such action is taken in consultation with the college physician as seems advisable. A small hospital room is maintained, to which a patient may be moved, and in which he may have entire quiet and such care and attention as may be required.

MEDICAL SERVICE.—Because of the necessity for systematic medical supervision of the students, a college physician has been appointed. An effort has been made to model the service after that of the most progressive universities, with certain modifications to fit local needs. Here at Kingston, the work comes at present under three heads: 1. The care of the sick. 2. A systematic examination of students with a view to giving any needed advice, and the keeping of permanent records of their condition. 3. The making of examinations for different branches of the Government service.

DORMITORIES FOR MEN.—East Hall affords excellent accommodations for men students. The two upper floors are entirely devoted to rooms for students. The sanitary conveniences on each floor are ample, including a full complement of shower baths. The first floor contains a social room for the men, two dining-rooms with capacity for one hundred and fifty students each, and a kitchen with good equipment.

Some of the college fraternities have erected buildings of their own, while others occupy houses rented by the college in the village of Kingston nearby.

Dormitories will be open for occupancy on Monday, September 19, 1921.

DORMITORIES FOR WOMEN.—The college maintains two dormitories for women, Davis Hall and South Hall, accommodating about fifty students. Each dormitory is supervised by a faculty member and every possible care is taken to guard the health and safety of the young women. Much attention is given to the social life among them. The dining-room for the women is in South Hall.

A practice house for home economics students has also been rented in the village.

FURNITURE.—The rooms in the women's dormitories are provided with necessary furniture, including mattresses, but no other bedding material. *All students in the men's dormitories are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from \$8.00 to \$10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold when the student leaves, for one-half to three-fourths the original price. All students should bring with them such articles as sheets, blankets, pillow, pillow-slips (all for single bed), and towels. Men students are required to purchase mattresses at the college.

ROOMS IN THE VILLAGE.—Furnished rooms in private houses for students who occupy them thruout the college year range from \$1.25 to \$2.50 per week. Arrangements for such rooms should be made by the individual, who may procure lists of available rooms at the college office.

COLLEGE STORE.—Students will be required to pay cash at the store for all books and other supplies. •

DAMAGE FUND.—All damage not due to ordinary wear will be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.
2. Students found guilty of such damage, but not acknowledging and settling for the damage will be charged double the cost of repair.
3. Students will be responsible for damage in their own rooms. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Religious Influences

This college is a state institution, and consequently, the widest latitude is given to all creeds and forms of religious belief. Simple assembly exercises are held on one day of each week and are conducted by the president or some other member of the faculty. It is required that students attend assembly.

A branch of the Intercollegiate Young Men's Christian Association is doing active work among the men students, holding a meeting weekly thruout the year. This association conducts courses in Bible study, and is taking the lead in endeavoring to establish sound and high ideals of college life.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and if possible to join its membership. Churches of various denominations in Wakefield, four miles distant, welcome our students. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

The College Lecture Association

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to provide both musical and literary entertainments. The association may be looked upon as a permanent and important factor in college activities.

Equipment

FARM AND CAMPUS.—The landed property of the college has a total area of 170 acres. About forty-one acres of this area are devoted to buildings, lawns, and athletic grounds; nine acres are in forest; and six are being developed as an arboretum. Thirty-five acres are used for the field investigations of the experiment station, which are valuable object lessons in agricultural instruction. The remainder is used for garden and orchard, and for raising crops for the live stock. The total value of land, buildings, and equipment is over \$500,000.

AGRICULTURAL BUILDINGS.—The agricultural buildings consist of a commodious dairy barn with laboratories for instruction in farm dairying and milk testing; a horse barn of modern construction; a greenhouse with an area of 10,000 square feet; a building attached to the greenhouse for class work in agronomy and horticulture, and a group of buildings used for instruction and experimentation in poultry raising.

ENGINEERING BUILDINGS.—The engineering department is equipped with modern machine, forge, and pattern-making shops, located in a building known as Ladd Laboratory. In Lippitt Hall, a granite building, 134 by 40 feet, are housed the lecture rooms, drawing rooms, testing rooms, and engineering laboratories of the department. A boiler house and a dynamo room, from which heat, power, and light are furnished for the various buildings, are a part of the engineering outfit for practical instruction and for experimentation in electrical and steam engineering.

SCIENCE HALL.—This building was first occupied in October, 1913. It consists of three stories and a basement, measures 154 by 60 feet, and is built of native granite. Here are housed the departments of chemistry, physics, zoölogy, bacteriology, and botany. Each department is provided with commodious laboratories, recitation room, and department library room. An amphitheatre having a seating capacity of 150 and provided with suitable projection apparatus, serves for the common use of the various departments requiring such a room.

HOME ECONOMICS LABORATORIES.—The special laboratories of this department are located in Davis Hall and in a small building near it.

TAFT LABORATORY.—The laboratories and offices of the experiment station are housed in a granite building known as Taft Laboratory.

DRILL HALL AND ATHLETIC HOUSE.—The drill hall, a room 134 by 40 feet, located in Lippitt Hall, is used both as an armory and as a gymnasium. A dressing room and bath room are attached to the hall. An athletic house provided with bath and dressing rooms for out-of-door sports is located at the athletic field, which is equipped with cinder track and straightaway for track athletics. Tennis courts for both men and women are also provided.

The Library

The library occupies two large adjoining rooms in Lippitt Hall and numbers over seventeen thousand volumes. The books are arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a card catalog gives author, title, and subject entries. As the library has been from the

first intended for reference work, the various departments of instruction have made their selections with the greatest care. In the reading-room, one hundred and twenty of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

Since the library has been a government depository twenty-five hundred books and pamphlets have been received, which are of value in scientific investigation and research.

The library is open every week day from 8:00 A. M. to 6:00 P. M., with the exception of an hour at noon. The librarian or her representative is in constant attendance, to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the State are at liberty to use the library.

Location

The college campus is one and one-half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. The ride from Providence is about forty to forty-five minutes in length. From New York the time is some four hours.

Telephone Calls

The college office cannot undertake to call students to the telephone. Messages will be taken to be delivered to students as soon as practicable. Men students boarding at the college may be reached over the pay-station telephone at East Hall, Narragansett Pier 20259-J at 7:00 to 7:30 A. M., 12:00 to 12:30 P. M., and 6:00 to 6:30 P. M. Women students may be reached over the pay-station telephone at Davis Hall 20259-W, at 7:30-8:00 A. M., 12:30-1:00 P. M., and 6:30-7:30 P. M.

DEPARTMENTS OF INSTRUCTION

The following subjects are offered in the different departments. In the departments of instruction all subjects preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture

PROFESSOR ADAMS, PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK,
MR. BRETT, MR. MERRILL, MR. KEEGAN.

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work outlined above, all students registered for a degree in agriculture will be required to show certain familiarity with the ordinary operations of the farm, before such degree is given.

In order that those students who have not had an opportunity to receive training in the practical work of the farm may become familiar with some of the more common operations, they will be required, during their connection with the college, to do a certain amount of routine farm work without pay. This will include work in the dairy barn, poultry yard, greenhouses and gardens. This training will be in addition to the laboratory credits prescribed in the regular course. The amount of such work required will depend upon the efficiency shown by the student. No college credits will be given for this work, yet the neglect of this phase of the training may be considered a sufficient cause for dismissal from the institution. Students taking practical work upon farms during the summer vacations will be required to furnish a certificate from their

employers, stating the time spent on the farm and the kind and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is to elect during the Senior year.

AGRONOMY

PROFESSOR ADAMS, MR. KEEGAN.

The instruction in agronomy begins the first term of the Junior year, when a study is made of the soil. Following this work are subjects dealing with the field crops and their uses as food for man and beast. In the work with soils and fertilizers, especial emphasis is placed upon the problems connected with the proper use of chemical manures.

The business side of farm life is given attention in the subject treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment station, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery.

Students have the advantage of the field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects

II. Forage Crops.—History and development of the plants used for forage silage, methods of construction of silos. *Two recitation credits, first term. Elective for Seniors in Agriculture and required of Juniors in Education Course, Agricultural option.* Mr. Keegan.

III. Soils and Fertilizers.—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Three recitation and one and one-half laboratory credits, first term. Required of Juniors in Agriculture and of Seniors in Education Course, Agricultural option; option for Juniors in Applied Science. Prerequisite: Chemistry I and II.* Mr. Keegan.

IV. Farm Crops.—Origin and history; production and place in the rotation of corn, wheat, oats, potatoes, clovers, grasses, and roof crops. *Three recitation credits and one laboratory credit, second term. Required of Juniors in Agriculture; and of second-year students in Education Course, Agricultural option. Option for Juniors in Applied Science. Prerequisite: Botany I and II. Mr. Keegan.*

VI. Farm Machinery.—Development of farm machinery, methods of construction, function, and operation. *Two recitation credits and one laboratory credit, second term. Elective for Juniors in Agriculture. Mr. Keegan.*

VII. Farm Management.—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming accounts. *Two recitation credits, second term. Required of Juniors in Agriculture. Prerequisite: Agronomy III and IV. Professor Adams.*

VIII. Farm Management (Advanced).—Individual problems of farm management are assigned. Field trips are made for studying different types of farming. Problems in planning cropping systems and other management work. There will be at least two one-day field trips. *One recitation and two laboratory credits, second term. Elective for Seniors in Agriculture. Professor Adams.*

IX. Literature.—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports on special topics. *Two recitation credits, second term. Elective for Seniors in Agriculture. Professor Adams.*

X. Agricultural Experimentation.—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits, second term. Required of Seniors in Agriculture. Professor Adams.*

XI. Plant Breeding.—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Three recitation credits, first term. Elective for Seniors in Agriculture; option for Seniors in Applied Science. Prerequisite: Botany I and II. Professor Adams.*

XII. Farm Accounting.—Aims and objects of farm accounts, farm inventories, single enterprise accounts, complete set of farm accounts and special records. Emphasis will be placed upon the interpretation of results as applied to the organization of a farm. *One recitation and two laboratory credits, first term. Required of Seniors in Agriculture. Professor Adams.*

XIII. Marketing of Farm Products.—Kinds of markets, methods of sale, marketing costs, prices, standardization of farm products, organization of co-operative markets. *Three recitation credits, second term. Required of Seniors in Agriculture. Professor Adams.*

ANIMAL HUSBANDRY

PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK, MR. BRETT

The subjects in animal husbandry are so arranged as to furnish practical as well as theoretical instruction in the selection, care, and

management of live stock on the farm. All students who graduate in agriculture are required to study breeds of stock, stock-judging, and veterinary practice. The student is taught how to select and care for farm animals. Students specializing in animal husbandry are offered advanced stock-judging, the principles of feeding, breeding, and the management of herds, flocks, and studs. Work in dairying is offered during the second term of the Junior year, and one who cares to specialize will find an elective thruout the Senior year.

Instruction in poultry culture is given during the Senior year, and is both practical and theoretical. During the same year an elective is offered in advanced poultry judging and poultry investigation. The equipment in poultry is particularly strong. The college poultry plant enables the student to obtain a large amount of practical experience in incubation, brooding, feeding, and general management. In addition to the poultry stock in the college yards, students have the opportunity of following the investigations which are being conducted by the experiment station. An eight weeks' course in poultry keeping is offered also during the winter months, full information concerning which may be obtained by addressing the President of the college.

Subjects

I. Stock Judging.—Scoring and comparison of various types of horses, cattle, sheep and swine, from the standpoint of the market and the producer. *Two laboratory credits, second term. Required of Freshmen in Agriculture, and of first-year students in Education Course, Agricultural option.* Professor Ladd.

II. Advanced Stock Judging.—A continuation of the work given in Animal Husbandry I in the judging of the various classes of farm animals. Tracing of pedigrees. Students chosen to represent the college in the annual stock-judging contest will be credited with this subject. *Two laboratory credits, second term. Elective for Juniors or Seniors in Agriculture.* Professor Ladd.

III. Breeds.—History and characteristics of the principal types and breeds of farm animals. A study of conditions to which each is adapted. *Two recitation credits, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option.* Professor Ladd.

IV. Principles of Breeding.—A study of the science and art of breeding. Discussion of the laws of heredity as applied to improvement of animal types. Special attention is given to recent experimental work in breeding. *Three recitation credits, second term. Required of Seniors in Animal Husbandry; option for Seniors in Applied Science; elective for others. Prerequisite: Zoölogy X.* Professor Ladd.

V. Animal Husbandry. Management of Dairy Cattle. This subject covers the field of milk production. It includes the building up of the dairy herd; care and management of the dairy calf; cost of growing dairy heifers; selection and care of the dairy sire; cow testing associations, bull associations and calf clubs; advanced registry work; construction of dairy barns and silos; production of certified and high grade milk; cost of milk production. *Two recitation credits, first term. Elective for Seniors in Agriculture.* Professor Ladd.

VI. Feeds and Feeding.—Composition and digestibility of feeds, principles of animal nutrition. Various methods of feeding farm animals. Balanced rations. Feeding standards. Compounding and figuring the cost of rations for different types and classes of animals. *Three recitation credits, first term. Required of Seniors in Agriculture, and of second-year students in Education Course, Agricultural Course, Agricultural option; option for Seniors in Applied Science. Prerequisite: Chemistry XIV.* Professor Ladd.

VII. Dairy Practice.—Lectures and laboratory practice in Babcock test and in handling milk and making butter on the farm. Herd testing methods. *One recitation and two laboratory credits, second term. Required of Juniors in Animal Husbandry; elective for others.* Assistant Professor Burdick.

VIII. Dairy Practice.—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and two laboratory credits, thruout the year. Elective for Seniors in Agriculture.* Assistant Professor Burdick.

IX. Research and Literature.—*Hours to be arranged, first term. Elective for Seniors in Agriculture.* Professor Ladd.

X. Veterinary Practice.—Veterinary anatomy, materia medica, obstetrics, pathology. Combating disease from the farmer's standpoint. Causes and treatment of injuries. *Three recitation credits, first term. Elective for Juniors in Agriculture. Prerequisite: Zoölogy X.* Professor Ladd.

XI. Animal Husbandry.—Animal Nutrition.—Advanced study of the principles of animal nutrition. Consideration of the classes of food nutrients; functions of each in the body; digestion, absorption and assimilation; demands for maintenance, growth, fattening, milk and work. Compilation of experimental feeding data. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.* Professor Ladd.

XIIa. Poultry Culture.—A study of all branches of poultry keeping. *One recitation credit, first term. Required of Juniors in Agriculture, and of first-year students in Education Course, Agricultural option.* Mr. Brett.

XIIb. Poultry Culture.—Laboratory work, consisting of pen practice, incubation, brooding, killing and dressing. *Two laboratory credits, second term. Elective for Juniors in Agriculture.* Mr. Brett.

XIII. Judging Poultry.—Practice in judging standard poultry both by comparison and score card methods. *Two laboratory credits, first term. Elective for Seniors in Agriculture.* Mr. Brett.

XIV. Poultry Husbandry.—Study of poultry investigations and experimental work in various lines of poultry keeping. *At least two laboratory credits, thruout the year. Elective for Seniors in Agriculture, and option for Seniors in Applied Science, first term.* Mr. Brett.

XV. Management of Beef Cattle and Horses.—Studies will be made of successful practices in feeding for the market as well as advertising, fitting for sale and show ring, and the general care and management of beef cattle. Horse production including market classes of horses, their production and utility, and successful methods of handling and training horses. *Two recitation credits, first term. Elective for Seniors in Agriculture.* Professor Ladd.

XVI. Management of Sheep and Swine.—Production of mutton and wool; production of spring lambs; fattening sheep and lambs for market; general care and management of the breeding flock; advertising, fitting for sale and the show ring. Pork production, breeding, care and management, diseases, markets, cost of production. *Two recitation credits, second term. Elective for Seniors in Agriculture.* Professor Ladd.

HORTICULTURE.

MR. MERRILL, MR. MARSH.

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the horticultural building. The main building contains the office and recitation rooms, together with photographic rooms. Attached to this building are greenhouses of modern construction, containing over 9,000 square feet under glass, 3,000 square feet of which are used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords the student an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens, and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity for the study of apples and pears especially. A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects

I. Propagation of Plants.—Different methods, including seed testing. Soft, green, and hardwood cuttings. Layering, grafting, and budding. *One recitation and one laboratory credit, first term. Required of Freshmen in Agriculture. Option for Juniors in Applied Science.* Mr. Merrill.

II. Vegetable Gardening.—Underlying principles and types of vegetable gardening; study of individual crops; text-book work. *Two recitation credits, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option; option for Seniors in Applied Science.* Mr. Merrill.

III. Fruit Culture.—Fundamental principles of orcharding; soil, fertilizer, and cultivation. Methods of laying out orchards and planting. Tillage, pruning, and spraying. Harvesting and storing fruits. Collateral reading and practical work. *Three recitation credits, first term. Required of Juniors in Agriculture, and of second-year students in Education Course, Agricultural option.* Mr. Marsh.

IV. Spraying and Pruning.—Preparation and application of spray mixtures; insecticides and fungicides. Methods of application for different orchard enemies, and machinery used. Pruning of fruit trees and ornamental shrubs. *One recitation and one laboratory credit, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option; option for Juniors in Applied Science.* Mr. Marsh.

V. Greenhouse Construction and Management.—Study of the different types of glasshouse structures; methods of heating and ventilating. *One recitation and two laboratory credits, second term. Elective for Juniors in Agriculture.* Mr. Merrill.

VI. Floriculture.—History of floriculture. Study of greenhouse plants, collectively and individually; practical work in propagation, potting, watering, ventilating, fumigating, and spraying. Study of bulbs, bedding plants, palms and ferns. *One recitation and two laboratory credits, entire year. Elective for Seniors in Agriculture. Prerequisites: Horticulture V.* Mr. Merrill.

VII. Horticulture By-Products.—Principles of canning and preserving fruits, manufacture of fruit juices and butters, cider, vinegar, evaporated fruits, pickles, sauces, jams and jellies. The aim of this subject is to equip the student with a knowledge of the means of converting surplus and low grade horticultural products into salable manufactured goods so as to make profits where losses might otherwise occur. *Two recitation credits, first term. Elective for Seniors in Agriculture. Prerequisite: Hort. III or Hort. XVII.* Mr. Marsh.

IX. Assigned Work.—Special subjects chosen by the student. *Elective for Seniors in Agriculture. Hours to be arranged.*

X. Pomology.—Orchard and bush fruits. Study of types; origin, and history; classification, description, and methods of handling. Orchard management. *One recitation credit and two laboratory credits, thruout the year. Option for Seniors in Agriculture and Applied Science, first term; elective second term. Prerequisite: Horticulture III.* Mr. Marsh.

XI. Advanced Vegetable Gardening.—Study of one or more crops selected by student. Practical work, research work, and text-book. *One recitation credit and two laboratory credits, second term. Elective for Seniors in Agriculture.* Mr. Merrill.

XVI. Landscape Art.—This subject is designed for students in general, and consists in the study and application of the rules and principles governing landscape design, the layout of farm, village, and city places, making of lawns. The use of ornamental trees and shrubs, flower beds, etc. *One recitation and two laboratory credits, first term. Elective for Juniors in Agriculture, and for first-year students in Education Course, Agricultural option; option for Seniors in Applied Science. Prerequisite: Botany III. Mr. Marsh.*

XVII. Small Fruits and Grapes.—The strawberry, raspberry, blackberry, dewberry, currant, gooseberry, grape. History; extent of cultivation; and management in home and commercial plantations. *Two recitation and one laboratory credit, second term. Given in alternate years, 1921, 1923. Required of second-year students in Education Course, Agricultural option; option for Juniors and Seniors in Agriculture. Mr. Marsh.*

Art

ASSISTANT PROFESSOR ELDRED.

The purpose of the subjects described below is to meet the drawing requirements of the Science laboratories, to give some knowledge of the principles of design and their practical applications, and to develop the appreciation of beauty in nature and in art. For agricultural and applied science students the work comprises outline drawing in pencil, from plant and animal forms and from objects chosen to illustrate the principles of perspective. In the home economics course, greater emphasis is placed upon the principles and practice of design; upon the study of color and color harmony, and upon the application of all these to such problems as those of costume and the arrangement, furnishing, and decoration of the home. The brief course in the history of art aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. The department has a considerable equipment of illustrative material for this work, including a collection of about one hundred and fifty casts and some four hundred photographs of folio or larger size, with several thousand smaller prints.

Subjects

II. Pencil Drawing from Objects.—Chiefly drawing from plant and animal forms, with some work in freehand perspective. *One laboratory credit, first term. Required of Freshmen in Agriculture, and in Applied Science.*

III. History of Art.—A brief survey of European art to about 1850, with the twofold purpose of showing the relation between art and the life of the people in various periods and of developing the appreciation of beauty as found in the fine

arts. *Two recitation credits, first term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics.*

V. Drawing in Charcoal from Still Life or the Cast.—*Two or more laboratory credits, second term. Elective.*

VI. Pen-and-Ink Drawing, Water Color or Pastel.—*Two or more laboratory credits, second term. Elective.*

VII. Modeling in Clay, from Cast or Object.—*Three laboratory credits, second term. Elective.*

VIII. Architectural Drawing and Interior Decoration.—The drawing of house plans, etc., and exercises illustrating the application of design principles to the planning, decoration, and furnishing of the home. *Two laboratory credits, second term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics.*

IX. History of American Art.—A study of American art and its relation to the national life. *Two recitation credits, first or second term. Elective.*

X. History of Modern European Art.—A continuation of subject III. *Two recitation credits, second term. Elective.*

XI. Theory of Design.—Costume Design.—Further study of the principles of design taken up in subject XII, with especial reference to their application in costume design. *Two laboratory credits, first term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics.*

XII. Drawing and Design.—An elementary consideration, by means of analysis, criticism, and original design, of the elements of beauty (including color) as exemplified in the industrial arts. *Three laboratory credits, second term. Required of Freshmen in Home Economics, and of first-year students, Education Course, Home Economics option.*

XIII. The Appreciation of Art.—A study of certain masterpieces for the elements of beauty which they present, without especial reference to their historical relations. The aim is to emphasize the operation in the fine arts of the same design principles already studied in the industrial arts, to provide a foundation for the study of the history of art, and to develop increased capacity for the enjoyment of beauty. *Two recitation credits, first or second term. Elective.*

Bacteriology

DR. MAY, MISS TIBBETTS.

The instruction in bacteriology is arranged to meet the requirement of two classes of students:

In the first place the subject is presented in an elementary way for those whose main interest lies in other fields of work, but who at the same time desire a general knowledge of micro-organisms and their

relation to problems of human life, including agriculture, sanitation, foods, and the many problems of personal and public health and hygiene. For such students Bacteriology I is offered.

In the second place the work in bacteriology is arranged to afford opportunity for specialization on the part of the students who anticipate entering some branch of applied bacteriology after graduation. Such specialization naturally looks forward to service in (a) the educational, (b) the commercial, (c) the municipal or (d) the research field, as exemplified by college teaching, private manufacturing laboratories of biologic products, departments of public health (city or State), and the State Agricultural Experiment Stations and privately endowed institutions of research, respectively. For students desiring to specialize in any of these fields, Bacteriology IIa and IIb are offered.

In Bacteriology IIa, opportunity is offered to acquire advanced bacteriological technique. The program is confined largely to laboratory work. In the second term of advanced bacteriology (IIb) advanced technique is continued with special reference to diagnostic blood tests involving agglutination, precipitation and complement-fixation methods.

Subjects

I. General Bacteriology.—A subject designed to give the student a general knowledge of the bacteria; a study of laboratory methods and technique for the cultivation of bacteria; the isolation and determination of unknown species. The students will also be made familiar with the varied application of bacteriology to practical problems, including the bacteriology of air, water, milk and other dairy products, together with the relation of bacteria to agronomy, dairying, hygiene and to the prevention, diagnosis and treatment of communicable diseases. *One recitation credit and three laboratory credits, first term. Prerequisite: Botany I or Zoölogy I. Required of second-year students in Education Course, Science and Home Economic options, and of Juniors in Home Economics. Elective for all others except Freshmen.*

IIa. Advanced Bacteriological Technique.—A study of special methods employed in the investigation of bacteriological problems. The work includes the preparation of culture media, the bacteriological examination of air and food products; a study of enzyme production by bacteria; of acid production; the relation of bacterial growth to oxygen supply; determination of thermal death point, of testing the germicidal power of unknown disinfectants, etc. *Four laboratory credits, first term. Prerequisite: Zoölogy VIII and Bacteriology I. Elective.*

IIb. Advanced Bacteriological Technique.—Laboratory studies involving the examination of the blood by bacteriological, histological and serological methods; serological diagnosis; and studies in immunity. *Four laboratory credits, second term. Elective for students who have passed with credit in Bacteriology IIa.*

Botany

DR. BROWNING, MR. RICHMOND

The subjects of this department are fundamental to much of the technical and practical work in agriculture and home economics. Plants for study are near at hand. A great variety of economic plants is grown on the land of the experiment station, and in the fields of the college farm. Many trees and shrubs are cultivated on the campus and plants of the native flora are always available. The greenhouses also furnish much material. The laboratory is equipped with dissecting and compound microscopes, paraffin bath, and simple physiological apparatus. A good working library, including several botanical periodicals, charts, models, and an herbarium of about 6,500 specimens are important factors.

Subjects

I. General Botany.—A study of common plants; their structure, physiology, and adaptation to environment. *Two laboratory credits and one lecture credit thruout the year. Required of Freshmen in Agriculture, Applied Science, and Home Economics, and of first-year students in the Education Course.*

II. Botany of Crop Plants and Weeds.—*Two laboratory credits and one lecture credit, first term. Required of Sophomores in Agriculture and Applied Science, and of second-year students in Education course, Agricultural option.*

III. Trees and Shrubs.—The determination of native and introduced trees and shrubs in summer and winter condition. *One laboratory or field credit thruout the year. Required of first-year students in Education Course, Agricultural option, and of second-year students, Education Course, Science option, second term. Required of Sophomores in Agriculture.*

IV. Forestry.—The management of a typical New England wood lot, a study of the structure and uses of various woods; the use of wood preservatives. *Two credits, second term. Given in alternate years. (Given 1921–1922.) Option for Juniors in Agriculture and Applied Science or for Seniors in Agriculture.*

V. Histology.—A study of standard cytological methods of embedding, sectioning and staining; a series of comprehensive histological studies on the seed plants. *Four laboratory credits and one lecture credit, first term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.*

VI. Pathology.—Parasitic fungi, the diseases of economic plants caused by them and the methods of controlling these diseases. *Four laboratory credits and one lecture credit, second term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.*

VII. Assigned Work.—*Three credits thruout the year. Elective for Seniors in Applied Science and Agriculture.*

Chemistry

PROFESSOR INCE, PROFESSOR HARTWELL, PROFESSOR JACKSON,
DR. BURGESS

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. The work is designed to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including the principal technical processes, and a brief account of the carbon compounds. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Two periods per week for the first half-year and three for the second half-year are devoted to the lectures and recitations, and three hours per week for a half-year to the practical work in the laboratory, where the student has an opportunity to verify some of the chemical theories and to become familiar with substances and their chemical behavior. During the second half of this year the laboratory period is devoted to qualitative analysis, which for Chemical Engineering and Applied Science students continues thru the first half of the Sophomore year. The subject is taught in part by means of recitations and lectures, but mainly by work in the laboratory. Students are required to complete a systematic course in basic and acid analysis, and to analyze correctly a number of alloys, salts, and minerals.

Quantitative analysis is taught mainly by laboratory practice, but sufficient time is devoted to lectures and recitations to teach thoroughly the fundamental principles involved. The work comprises gravimetric and volumetric analysis, and the quantitative determination of salts, alloys, ores, minerals, and commercial and food products. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such theoretical and practical knowledge as to prepare him for analytical work of any kind.

The study of organic chemistry begins with a short course, designed to cover the general principles and methods, and to include a description of the more important compounds. The subject is continued by those who wish to specialize in chemistry in a more extended course covering the aromatic series and the chemistry of the dyestuffs, and accompanied by laboratory work in organic preparations and analysis. The theoretical and basic principles of chem-

istry, with their general application, are thoroly studied by recitation, lectures, and laboratory work in the course in physical chemistry.

The descriptive side of industrial chemistry, which comprises a general survey of the technical applications of chemical principles to the arts and industries, is studied by recitation work; while practical technical operations, such as textile coloring, suited to the needs of the individual student, are studied by laboratory practice.

Agricultural chemistry, required of agricultural students in the Sophomore year, embodies the chemistry of soils and fertilizers, also the chemistry involved in the changes which take place during the growth of animals and plants, as well as in the storage or manufacture of the ordinary farm products.

Subject XXI is intended to familiarize the student with the general field of chemical literature, and to inculcate the habit of keeping up with the recent advance in chemical science by reports and discussion of articles appearing in the chemical journals. This course is preparatory for Subject XX, which involves original investigation.

The laboratory occupies the first floor and a part of the basement of Science Hall, seventeen rooms altogether, including a large general laboratory, organic and analytical laboratories, weighing room, library, large lecture room, recitation room, two offices, store rooms and supply room. It is well equipped with apparatus and consulting library for teaching the subjects mentioned below.

Subjects

I. General Chemistry.—*Two recitation and one and one-half laboratory credits first term. Required of Freshmen in all courses, and of first-year students in Education Courses. The Department.*

II. General Chemistry and Qualitative Analysis.—*Three recitation and one and one-half laboratory credits, second term. Required of Freshmen in all courses and of first-year students in Education Courses. The Department.*

III. Qualitative Analysis.—*Basic and acid analysis; analysis of salts, industrial and natural products. Three laboratory credits, first term. Required of Sophomores in Applied Science and Chemical Engineering and in Education Course, Science option. The Department.*

IVa. Organic Chemistry.—*Three recitation credits and one laboratory credit, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Required of second-year students, Education Course, Agricultural and Home Economics options, and optional for second-year students, Education Course, Science option. Professor Ince.*

IVb. Organic Chemistry.—*Three recitation credits and one laboratory credit, first term. Required of Sophomores in Home Economics, Agriculture, and Applied Science; elective for others who have completed Chemistry III. Professor Ince.*

V. Organic Chemistry (advanced).—*To be given alternate years. Given next in 1922. Four recitation credits, second term. Required of Juniors in Chemical Engineering and of Seniors who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Ince.*

VI. Organic Chemical Laboratory.—*Three laboratory credits, second term. Required of Juniors in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry IV. Professor Ince.*

VII. Quantitative Analysis.—*Analysis of minerals, ores, alloys, and industrial products. Three laboratory credits, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry III. Professor Ince.*

VIII. Quantitative Analysis.—*Five laboratory credits, second term, Junior year. Required of students in Chemical Engineering, and of students who take the Chemical option in Applied Science. Elective for those who have completed Chemistry III. Professor Ince.*

X. Food Analysis.—*To be given alternate years; given next in 1922. Four credits, second term. Required of Seniors and Juniors in Home Economics and in Teacher-Training Course in Home Economics. Elective for others who have completed Chemistry IVb. Professor Jackson.*

XII. Physical Chemistry.—*To be given alternate years. Given in 1921. Four recitation credits, second term. Required in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry III. Professor Jackson.*

XIV. Agricultural Chemistry.—*Four recitation credits, second term. Required of Sophomores in Agriculture and of second-year students in Education Course, Agricultural option. Prerequisite: Chemistry I, II and IVb. Professor Hartwell.*

XV. Gas Analysis.—*See Mechanical Engineering XV.*

XVIa. Industrial Chemistry.—*Three recitation credits, first term. Required of Juniors in Chemical Engineering and of Juniors who take the Chemical option in Applied Science. Elective for others who have completed Chemistry IV. Professor Jackson.*

XVIb. Industrial Chemistry.—*Three recitation credits, first term. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical option in Applied Science. Elective for others who have completed Chemistry XVIa. Professor Jackson.*

XVII. Industrial Chemistry.—The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis, textile coloring, soap, rubber, refining of oils, water analysis, etc. *Three laboratory credits thruout the year. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical option in Applied Science.* Professor Jackson.

XIX. Physiological Chemistry.—To be given alternate years. Given in 1921. *Four credits, second term. Required of Seniors and Juniors in Home Economics and in Teacher-Training Course in Home Economics; option in Applied Science for Seniors.* Professor Ince.

XX. Assigned Work.—*Three credits, thruout the year. Required of Seniors in Chemical Engineering who do not take the work in the Reserve Officers' Training Corps. Required for the first term of Seniors who take the Chemical option in Applied Science.* Professor Jackson.

XXI. Reports and Discussion of Chemical Subjects and Recent Investigations.—*Two credits, second term. Required of Seniors in Chemical Engineering; and of Seniors taking the Chemical option in Applied Science.* Professor Jackson.

XXII. Organic or Physical Chemistry.—*Two laboratory credits, second term. Required of Seniors in Chemical Engineering, and of those who take the Chemical option in Applied Science.* Professor Ince, Professor Jackson.

XXIII. Chemistry.—Introductory Quantitative Analysis. *Two laboratory credits, second term. Required of Sophomores in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry III.* Professor Ince.

Economic and Social Science

PRESIDENT EDWARDS

I. Economics.—Text-book, supplemented by lectures, reading, and essay. *Three recitation credits, first term. Required of Seniors in all courses, except in Education course, Agricultural and Science options.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.*

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmers, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations; federation of rural social forces. *Elective.*

Engineering,—Chemical

PROFESSOR INCE, PROFESSOR JACKSON, DR. BURGESS.

The course in chemical engineering is based upon the principles of chemistry and of mechanical and electrical engineering. It is designed to prepare men for those industries in which chemical processes play a vital part. The subjects in chemistry aim to train the student thoroly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the various branches of chemical analysis, and to make him familiar with the practical applications of chemistry. The subjects in mathematics, physics, mechanical and electrical engineering aim to give the training necessary to solve the mechanical and electrical problems that present themselves when chemistry is applied to the industries.

While the primary purpose is to turn out men well equipped to take up any line of chemical engineering, yet, owing to the important textile interests in this state, and the increasing importance of the manufacture of chemicals and dyestuffs, especial emphasis is placed on the manufacture and application of dyes. The following are some of the industries which offer opportunities to the chemist and the chemical engineer:—The manufacture of chemicals and dyestuffs; the bleaching and dyeing of cotton, wool, and silk; the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, sugar, paper pulp, paper, soap, paint and varnish; the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion or destructive distillation to form gas, coke, and tar, embracing further the whole field of forest-products utilization; and the processes of water and sewage purification.

A detailed description of the subjects will be found under their respective departments.

Engineering,—Civil

PROFESSOR WEBSTER, MR. KNOWLES

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various fields of civil engineering. With this object in view, application of the theories and principles learned in the class-room is made in the

field, laboratory, and drafting room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the students' opportunities, the name of the department has been changed from Highway Engineering to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance of highway engineering in this state and thruout the country in general, considerable emphasis is still placed on this phase of engineering work.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and testing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects.

Subjects

I. Surveying.—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering, and in Agriculture.*

II. Topographic Surveying.—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits, second term. Required of Sophomores in Civil Engineering.*

IIIa. Railroad Engineering.—The work consists of a reconnoissance, a preliminary and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates are made. A study is also made of the properties of curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Two recitation and three field credits, first term. Required of Juniors in Civil Engineering.*

IIIb. Railroad Engineering.—The principles of economic railroad construction and maintenance; railway appliances, ballast, and roadbed, culverts and trestles, turnouts, sidings, yards, terminals, signaling, locomotive and grade problems, betterment surveys, etc. *Three recitation credits, second term. Required of Juniors in Civil Engineering.*

IV. Graphic Statics.—Instruction is given in graphic statics and its application in the design of simple framed structures. *Two recitation credits, first term. Required of Juniors in Civil Engineering.*

V. Roads and Pavements.—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction and maintenance of earth, gravel, and macadam roads, together with a discussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the surveying, leveling, cross-sectioning and designing of a short piece of road. *Three recitation credits and one field credit, second term. Required of Juniors in Civil Engineering.*

VI. Bridge Details.—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *Two laboratory credits, first term. Required of Seniors in Civil Engineering.*

VII. Bridge Analysis.—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

VIII. Bridge Design.—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits, second term. Required of Seniors in Civil Engineering.*

IX. Masonry Construction.—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and a systematic and thoro laboratory course on cement testing is given. *Two recitation credits and one laboratory credit, second term. Required of Seniors in Civil Engineering.*

X. Reinforced Concrete.—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XI. Sewerage.—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers; removal of house sewage; the design and construction of sewers and method of sewage disposal. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of waterworks, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitation credits, second term. Required of Seniors in Civil Engineering.*

XIII. Tunneling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit, second term. Elective for Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XV. Assigned Work.—With the advice and consent of the head of department, the student elects three hours' work in the Senior year. This may be research, thesis, or recitation and laboratory work, depending upon the qualifications of the student. *Three credits, thruout the year. Required of Seniors in Civil Engineering not in R. O. T. C.*

XVII. Metal Structures.—The graphic determination of stresses in steel mill buildings. *One laboratory credit, second term. Elective for Seniors in Civil Engineering.*

XVIII. Irrigation Engineering.—This includes a study of the impounding, diverting, flow, and measurement of water, quantity required, canals, canal works, storage reservoirs, waterways, etc. *Three recitation credits, first term. Elective for Seniors in Civil Engineering.*

Engineering,—Electrical

PROFESSOR ANDERSON AND ASSISTANT PROFESSOR COGGINS

The aim of the course in electrical engineering is to give the student such training in the fundamental principles of the subject as will fit him to take up, in an intelligent and effective manner, any line of engineering work requiring special electrical knowledge. Instruction is given in both class-room and laboratory, the aim of each method of instruction being to supplement the other, and to develop resourcefulness and the habit of independent thought on the part of the students.

Subjects

I. Theory of Direct Currents.—A detailed study of the theory of direct-current apparatus. The theory of dynamos, motors, and auxiliary apparatus. *Three recitation credits, first term. Required of Juniors in Electrical Engineering and of Seniors in Chemical, Mechanical and Civil Engineering.*

II. Direct-Current Laboratory.—A series of tests of various types of direct-current apparatus. These include magnetization and characteristic curves of different types of machines, as well as tests for efficiency, regulation, temperature rise, and tests of a similar nature. *Three laboratory credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

IV. Theory of Alternating Currents.—Recitations and lectures. The elements of the theory of alternating currents and of alternating-current machinery.

This subject includes the simple theories regarding the action of A. C. dynamos, motors, converters, and transformers. *Two recitation credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical and Civil Engineering.*

V. Theory of Alternating Currents.—Recitations and lectures, continuing subject IV. The more advanced theories regarding the effect of inductance and capacity in A. C. circuits, and of the action of A. C. machinery, are discussed. Assigned readings and reports are a feature of the subject. *Three recitation credits, thruout the year. Required of Seniors in Electrical Engineering.*

VI. Alternating-Current Laboratory.—A series of tests of different types of alternating-current apparatus, such as single and polyphase generators and motors, induction motors, converters, and transformers. *Three laboratory credits, thruout the year. Required of Seniors in Electrical Engineering.*

VII. Design of Electrical Machinery.—General principles of the design of electrical apparatus, including a direct and an alternating current generator. *Three laboratory credits, second term. Required of Seniors in Electrical Engineering.*

VIII. Telephone Engineering.—A consideration of the development of the modern telephone, with special reference to the common battery systems. *One recitation credit, second term. Required of Seniors in Electrical Engineering.*

X. Transmission of Energy.—A study of systems of high-tension distribution, the effect of capacity and inductance, the construction of lines, their protection, and the troubles developing in high-tension work. *Four recitation credits, second term. Required of Seniors in Electrical Engineering.*

XI. Electric Railway Engineering.—A discussion of the economic considerations in the development of an electric railway, methods of construction, the location of the generating station, the design of the distributing system, types of motors, and systems of control. *Two recitation credits, second term. Required of Seniors in Electrical Engineering.*

XII. Assigned Work.—Members of the senior class are required to prepare and to present before the class, papers, discussions, and reports upon topics of interest to engineers. As a rule, each student presents about four papers in the course of the year's work.

A portion of the assigned time is also devoted to research work, the amount of time so used varying with the nature of the problem, and the ability of the student profitably to utilize the time. *Three laboratory credits, second term. Required of Seniors in Electrical Engineering not in R. O. T. C.*

Engineering,—Mechanical

PROFESSOR WALES, MR. ELDRED, MR. KNOWLES, MR. ARCHIBALD.

It is the object of the work in the department of mechanical engineering to turn out broad-gauged, self-dependent men, well trained in engineering theory, familiar with the practical matters of construction and operation, and having some knowledge of the

economic relations which the engineer and industrial development bear to modern society. In the endeavor to train men who will touch life, not at one point, but at many, the work of the department is supplemented and rounded out by extended and vigorous courses along the lines of electrical engineering, physics, mathematics, chemistry, English, history, modern languages, and political economy. The special work of the department of mechanical engineering divides itself naturally into the following general groups: shop practice, design, steam engineering, and experimental engineering. Each of the above groups is amplified and briefly described below:

SHOP PRACTICE

The object of this work is to give familiarity with principles, operations, possibilities, and management, rather than to develop the greatest dexterity in manipulation. Shop practice extends over three years of the course, and comprises forging and foundry work, pattern making, and machine-tool operation. The shops are exceptionally well equipped with machines and tools of all kinds. In the machine shop are six metal lathes, speed lathes, planes, 16-in. shaper, two drills, two tool grinders, drill grinder, milling machine, punching-press, vertical boring and turning mill, together with the usual assortment of tools and auxiliaries. The pattern shop is provided with lathes, circular saw, band saw, jig saw, dowel machine, surface and buzz planers, etc. Fifteen work-benches fully provided with the small tools of the pattern maker complete the equipment. The forge shop is equipped with the usual anvils, forges, fullers, swages, hardies, etc., while a full stock of patterns, shovels, riddles, flasks, and trowels is provided for the work in foundry practice. Enthusiasm is given to the work by the construction of things of real value—a new machine for the shop or a piece of apparatus for the laboratory—instead of spending the whole time on worthless “exercises.”

DESIGN

The work along the lines of design extends thruout the four years, beginning with freehand and mechanical drawing and ending with machine design and power-plant design in the Senior year. Leading up to this final work are the terms of mechanical drawing, descriptive geometry, mechanism, valve gears, dynamics of machines, mechanics, strength of materials, hydraulics, and thermo-dynamics.

All the forces of correct theory and the practice of the most successful builders are brought to bear upon the solution of definite, practical problems.

STEAM ENGINEERING

Steam engineering begins in the Junior year and runs thru the remainder of the course. A rigorous study of the mathematical theory of thermo-dynamics supplies the foundation for the study of boilers and engines, design and economy, and the various devices and auxiliaries of the power plant. In the Senior year is considered the particular branch of heating and ventilating. In this year, also, the subject of power plants is taken up, which applies all the previous training in steam engineering, and which brings together and unifies all allied subjects.

EXPERIMENTAL ENGINEERING

This subject, which extends thruout the Junior and Senior years, is intended to fix the theory developed in all the other lines of work. Instruction is given by means of lectures and laboratory tests. The student becomes familiar with the theory, construction, use, and calibration of the instruments and apparatus used by the engineer, and gains experience in making accurate standard and special tests. The work is divided into four groups: one, dealing with the chemical problems of engineering—testing of gases, oils, fuels, feed water, etc.; a second, with general calibration and testing; a third, with the study and tests of structural materials; and the fourth, with general power-plant testing. In power-plant testing the students make the necessary plans and preparations, perform the experimental work, and prepare formal reports, with recommendations for improvement in economy, etc. These tests are made not only on the college power-plants, but on those of manufacturing establishments of the State. The equipment for experimental work comprises several boilers and steam engines, large steam pump, gas engines, feed-water heaters, several steam and gas engine indicators, steam calorimeters, tanks, scales, injectors, water turbine, hydraulic ram, pulsometer, centrifugal pump, belt pump, weirs, two-stage air compressor, air-brake outfit, meters, gauges, 50,000-lb. tension and compression machine, apparatus for oil and gas testing, fuel calorimeter, complete outfit for testing cements and concretes, etc. Thruout the work the greatest stress is laid upon the correct calculation and interpretation of results, and accuracy and self-dependence are developed to the fullest.

Subjects

I. Mechanical Drawing.—Lettering, freehand sketching, use of drafting tools, geometrical problems, projections, machine parts. *Four laboratory credits, first term. Required of Freshmen in Engineering.* Mr. Eldred.

II. Forge and Foundry.—Forging, drawing, bending, welding, etc. Principles of moulding, core making, and casting. *Two laboratory credits, first term. Required of Freshmen in Engineering.* Mr. Archibald.

III. Pattern Making.—Use of tools, bench and lathe work, pattern making. *Two laboratory credits, second term. Required of Freshmen in Engineering.* Mr. Archibald.

V. Descriptive Geometry.—Elementary principles; problems relating to the point, line, plane, cylinder and double curved surfaces of revolution, intersections, and developments. *One recitation and two laboratory credits, second term. Required of all Freshmen in Engineering.* Mr. Eldred.

VIa. Mechanical Drawing.—Detail and assembly drawings, elementary machine design. *Two laboratory credits, first term. Required of Sophomores in Mechanical, Electrical, Civil, and Chemical Engineering.* Mr. Eldred.

VIb. Mechanical Drawing.—Continuation of Mechanical Engineering VI. *Two laboratory credits, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.* Mr. Eldred.

VII. Machine Shop.—Hand work in chipping and filing, use of machine tools, construction of machines. *Three laboratory credits, first term; required of Juniors in Electrical Engineering. One and one-half laboratory credits, second term. required of Sophomores in Civil Engineering.* Mr. Archibald.

VIII. Machine Drafting.—Technique of machine drafting, application of kinematics to the design of gears, valves, linkages, quick-return motions, etc. *Three laboratory credits, first term. Required of Juniors in Mechanical Engineering.* Mr. Eldred.

IXa. Heat Engineering.—Thermo-dynamics.—Mathematical development and discussion of the laws of thermo-dynamics, and their application to perfect gases, saturated and superheated steam. Theory of air compressors, pneumatic machinery, hot-air engines, gas engines, and refrigerating machines. Boilers, engines, engine economy, effect of cylinder walls, compounding, superheating, use of jackets, varying cut-off, speed, pressure, etc. Flow of fluids, injectors, and thermo-dynamic principles applied to the steam turbine. *Three recitation credits, first term. Required of Juniors in Mechanical, Electrical, and Civil Engineering, and Seniors in Chemical Engineering.* Professor Wales.

IXb. Heat Engineering.—Continuation of Mechanical Engineering IX.—*Three recitation credits, second term. Required of Juniors in Mechanical and Electrical Engineering; and for nine weeks, of Seniors in Chemical Engineering.* Professor Wales.

Xa. Applied Mechanics.—Forces, composition and resolution, parallel forces, moments, couples, centres of gravity, velocity, acceleration, energy and momen-

tum, falling bodies and projectiles, centrifugal force, moment of inertia, radius of gyration, angular momentum, energy of rotating bodies, impact, etc. Solution of practical problems. *Five recitation credits, first term. Required of all Juniors in Engineering.* Professor Wales.

Xb. Applied Mechanics.—Strength of materials, stresses in structures, riveted joints, beam theory, struts, columns, shafting, springs, etc. Solution of practical problems. *Five recitation credits, for six weeks, second term. Required of all Juniors in Engineering.* Professor Wales.

XI. Hydraulics.—General principles, head and pressure, center of pressure, velocity of discharge, flow through orifices and over weirs, Bernouilli's theorem, flow through pipes, flow through conduits and canals, energy of flow, horse-power, hydraulic machinery, rams, turbines, centrifugal pumps, and Pelton wheels. Merriman's Treatise on Hydraulics. *Five recitation credits per week, for last twelve weeks of second term. Required of all Juniors in Engineering.* Professor Wales.

XII. Mechanism.—Instantaneous centers, centroids, lobed wheels, belts, pulleys, four-bar linkages, graphical determination of velocity ratios, quick-return motions, straight-line motions, pantographs, trains of gears, epicyclic trains, tooth gearing, epicycloidal and involute teeth, bevel wheels, etc. Schwamb and Merrill's Mechanism. *Three recitation credits per week, second term. Required of Sophomores in Mechanical, Electrical, and Chemical Engineering.* Mr. Knowles.

XIII. Valve Gears and Dynamics.—Plane slide valves, piston valves, riding cut-off valves; Joy and Marshall gears; Stephenson, Gooch, and Walschart link motions; drop cut-off valves; Corliss, Brown, and Putnam valves. Peabody's Valve Gears. Lectures and references. *Three recitation credits per week, second term. Required of Juniors in Mechanical Engineering.* Mr. Knowles.

XIV. Machine Shop.—Advanced work in machine construction. *Three laboratory credits per week, thruout the year. Required of Juniors in Mechanical Engineering.* Mr. Archibald.

XV. Experimental Engineering a.—Lectures and laboratory work in gases, oils, and fuels; flue-gas analysis, calculation of air per pound of coal, loss due to excess air and to imperfect combustion; analysis of fuel gases and calculation of heating values; determination of heating values by the Junkers and Parr calorimeters; study of gases in producer and gas-engine work. Analysis of coal and other fuels. Analysis and testing of lubricating and fuel oils. Testing of boiler waters. *One recitation and one laboratory credit, first term. Required of Juniors in Mechanical Engineering.* Professor Wales.

XVI. Experimental Engineering b.—General calibration and testing of engineering instruments and apparatus; gauges; planimeter; manometers; indicators; Prony brakes; scales; valve setting by measurement and by the indicator; Carpenter calorimeter; Peabody calorimeter; flow through orifices; weirs; nozzles; Pitot tube; meters; Venturi meters; hydraulic ram; turbine, etc. *Two laboratory credits per week, second term. Required of Juniors in Mechanical, Electrical and Civil Engineering.* Mr. Knowles.

XVII. Experimental Engineering c.—Properties of materials. Lectures on the metallurgy of iron and steel; effects of impurities; cold-working; repeated stresses; tensile, compressive, and shearing strengths; ductility; resilience, etc.; copper, brass, bronze, and other alloys; timber, stone, and brick. The manufacture of natural and Portland cements; effects of over-and under-burning, over-liming, SO_3 , etc.; discussion of tests and their interpretation. Laboratory work is parallel with lectures. Tensile strengths of cast-iron, wrought-iron, and steel; compressive strength of metals, timber, concrete, cement; shearing tests of metals; transverse tests of timber and iron; stress-strain diagram, elastic limit, yield point, modulus of rupture; tensile tests of cement; pat tests, boiling tests; specific gravity; fineness; time of set, etc. Determination of the best proportions of cement, sand, and rock of given characters. *Two lectures and one and one-half laboratory credits, first term. Required of Seniors in Mechanical, Electrical, and Civil Engineering.* Mr. Knowles.

XVIII. Experimental Engineering d.—Hot-air engine, gas engine, steam pump, injectors, transmission dynamometers; boiler tests; complete tests of power plants; outside work on the H. P. of a stream, with tests of hydraulic power plant; outside tests of manufacturing plants, with calculations, reports, and recommendations. *Two laboratory credits, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XIX. Heating and Ventilation.—Discussion of the principles and practice of the various systems of heating and ventilating—direct and indirect, hot-air, hot-water, pressure steam, exhaust steam, vacuum systems, fans, blowers; calculation of ventilation and radiation; flues, pipes, and radiators; air troubles; central heating systems with central power plants; design of heating system for a given building. *One recitation credit, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XX. Machine Design.—Design of machine parts from considerations of the motions involved, strength, rigidity, and friction; design of a complete machine; calculations with design of some type of engine, starting with given requirement of H. P., speed, etc., and with an assumed theoretical indicator card. *Three laboratory credits, thruout the year. Required of Seniors in Mechanical Engineering.* Mr. Eldred.

XXI. Power Plants and Power-Plant Design.—Study of the various types—as to choice, location, installation, and operation; prime movers, their accessories and auxiliaries.

Steam plants.—Study of the effects on economy, range, and reliability of simple or compound, condensing or non-condensing engines with various valve gears, throttling and cut-off governors, different boiler installations, feed-water heaters, economizers, pressure regulators, pumps, injectors, mechanical stokers, forced and induced draft, chimneys, etc.; calculations of proper sizes, powers, and strengths of machines and apparatus of the power plant; methods of improving economy. The place of the steam turbine in power-plant work.

Hydro Plants.—Discussion of the types of hydraulic machinery, their efficiency, and the particular conditions to which each is best adapted. This will be a development of the previous work in hydraulics to meet the need of the power engineer.

Gas-Producer Plants.—The different suction and pressure producers, theory, capacity, future, etc.; gas engines, from both the thermo-dynamic and the mechanical points of view. *Two lecture credits and one laboratory credit per week, first term. Required of Seniors in Mechanical Engineering. Two lecture credits per week, first term. Required of Seniors in Electrical Engineering.* Professor Wales.

XXII. Assigned Work.—This may be of the nature of research or of specialized study along some particular line of engineering. *Three credits per week, thruout the year. Required of Seniors in Mechanical Engineering not in R. O. T. C.* Professor Wales.

XXIII. Dynamics of Machines.—Analysis of stresses, effects of inertia, balance, reciprocating parts, flywheels, design of high-speed engines and machinery. *Two recitation credits per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XXVI. Business Organization and Management.—The organization of engineering industries, and the laws and methods of business applying to them. *Three lecture credits per week, second term. Required of Seniors in Mechanical and Chemical Engineering.* Professor Wales.

English

PROFESSOR CHURCHILL, ASSISTANT PROFESSOR PECK, MISS HALL.

The English department offers subjects in literature and in rhetoric and composition. The required work extends over the four years. Elective subjects in literature are provided for Juniors and Seniors. Both literature and composition subjects place emphasis on the practical and the contemporary phases of the work.

The library is an important factor in the work of the department, as it contains some twelve hundred volumes of representative English and American literature.

LITERATURE

IV. Modern Essays.—Study of representative essays of England and America in the 19th and 20th centuries. *Three recitation credits, first term. Required of all Juniors except those in Reserve Officers' Training Corps and in Teacher-Training Course in Agriculture.*

V. Shakespeare.—A course in appreciation. Most of the plays are read, then compared, so that the growth and development of Shakespeare's power may be appreciated. One comedy, one historical play, and one tragedy are carefully and critically studied. *Three recitation credits, second term. Required of Seniors in Applied Science, in Home Economics, and in Teacher-Training Course in Home Economics.*

VI. Current Literature and Composition.—A critical study of contemporary work as it appears in a periodical of the type of the *Atlantic Monthly*. Practice in writing familiar essays and short stories. *Two recitation credits thruout the first term. Option for Freshmen in Home Economics.*

VII. The English Novel.—Study of the development and technique of the novel in England. *Two recitation credits, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics Courses.*

VIII. Interpretation.—Training in interpretation and dramatic presentation of a classic drama, leading to the public presentation of the drama selected. *One recitation credit, second term. Required of Sophomores in Home Economics.*

XI. American Poetry.—An appreciative reading study of American Poetry as a whole, using Bronson's "American Poetry" as a basis for the work, followed by a brief study of modern verse in America and Europe. *Two recitation credits, first term. Elective as an extra for Juniors and Seniors in Applied Science. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics.*

XII. Contemporary Drama.—Lectures on the history and development of the drama. Study of contemporary drama of America and Europe. *Two recitation credits, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics Courses.*

Either VII or XII will be offered if six or more students ask for the course.

RHETORIC AND COMPOSITION

I. Rhetoric and Composition.—Outlines of rhetorical theory, study of models illustrating the various literary forms, exercises, weekly themes. *Three recitation credits, thruout the year. Required of Freshmen in all courses.*

II. Newspaper Work.—The technique of structure and style as applied to newspaper methods. Daily practice, special emphasis on editorial paragraph writing, based on the study of current events. *One recitation credit, first term. Required of Sophomores in Home Economics.*

III. Argumentation.—Theory and Practice. Training in the principles of brief-drawing; weekly practice in extemporaneous speaking and debating. *Two recitation credits, second term. Required of Sophomores in all courses.*

IX. Debating.—Instruction and practice in the art of debate. *One recitation credit, first term. Required of Juniors in Agriculture, Applied Science and Engineering. Juniors in Home Economics may elect work for an additional hour of credit.*

Geology

Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to those characteristics of rocks which are of chief importance in connection with road construction.

Subjects

I. Geology.—*Two recitation credits, second term. Required of Juniors in Civil Engineering and Sophomores in Agriculture and Applied Science, and of first-year students, Education Course, Science and Agricultural options.*

History

PRESIDENT EDWARDS, PROFESSOR CHURCHILL

I. Social, Economic, and Industrial History of the United States.—*Three recitation credits, second term. Required of all Juniors not in Reserve Officers' Training Corps. Professor Churchill.*

II. Government and Politics in the United States.—*Three recitation credits, second term. Elective. President Edwards.*

III. Modern European History.—*Three recitation credits, first term. Required of Sophomores in all courses and of first-year students in Education Course, Home Economics option. Professor Churchill.*

Home Economics

PROFESSOR BACHE, PROFESSOR PEPPARD

There are two home economics laboratories: a small building near South Hall is used for the foods, dietetics and nutrition classes. It is well lighted and ventilated and equipped for sixteen students. The clothing laboratory is housed in Davis Hall and accommodates sixteen students. The latest books for reference in home economics courses are kept in the library and are at the disposal of the students at all times.

Subjects

Ia. Garment Making.—Instruction and practice in hand and machine sewing, pattern making, adaptation of commercial patterns applied to making undergarments and simple wash dresses. The study of the development of the textile industry, manufacture of fabrics, and of woman's place in industry with reference to clothing and textiles. *Three and one-half credits, first term. Required of Freshmen in Home Economics, and in Education Course in Home Economics.*

Ib. Garment Making.—Continuation of Home Economics Ia.—*Three and one-half credits, second term. Required of Freshmen in Home Economics and in Education Course in Home Economics.*

III. Hygiene.—Presentation of the factors that make for healthy bodies and sound nerves. A readjustment of habits to meet the conditions of group and community life. *One recitation credit, first term. Required of all women, freshman year.*

IVa. Foods.—Sources, manufacture, and chemical composition of foods and the relation of the principles of chemistry, physics, biology, and bacteriology to the cookery processes and digestion of foods; selection and combinations of foods, their comparative nutritive and economic values and their place in the diet. *Three laboratory credits, first term. Prerequisite: Chemistry I and II. Required of all Sophomores in Home Economics, and of first-year students in Education Course, Home Economics option.*

IVb. Foods.—Continuation of Home Economics IVa. *Three laboratory credits, second term. Required of all Sophomores in Home Economics.*

VII. Sanitation and House Planning.—Study of location of the house, heating, lighting, water supply, plumbing, and care of the house with reference to health, convenience, and cost. Public sanitation as it relates to the household is considered. Evolution of the house, its adaptation to modern conditions, principles involved in planning, furnishing and decorating the house from the standpoint of convenience, economy, health, and art. *One recitation credit and one laboratory credit, first term. Required of Juniors in Home Economics, in Teacher-Training Course in Home Economics and second-year students in Education, Home Economics option.*

VIII. Dietetics.—Nutritive value of foods and the daily food requirements; dietary studies based on family budgets of varying incomes; the making of menus and preparation of meals. The study of digestion and metabolism under conditions of health; variations in the diet necessary in pathological conditions and dietetic treatment in certain diseases. *Two recitation and one laboratory credits, second term. Prerequisite: Chemistry IV, Zoölogy X, Home Economics IV. Prerequisite or Parallel, Chemistry X-XIX. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics.*

IX. Home Economics.—The purpose of the household, development, relation to industry, state, municipality and other social institutions; keeping of budgets and household records. *Three lecture periods, first term. Required of Juniors in Home Economics and in Teacher-Training Course in Home Economics.*

XII. Home Nursing.—Suitable furnishing and arrangement for the sick room; care of patient—bathing, moving, feeding, etc.; first aid and emergency measures; hygiene of infectious and contagious diseases; care of infants and children. *One recitation, one laboratory credit, second term. Required of Juniors in Home Economics, in Teacher-Training Course in Home Economics and of second-year students in Education Course, Home Economics option.*

XVIIIa. Dressmaking.—Consideration of quality, suitability, and cost of materials used in making simple wool and silk dresses. Adaptation of art principles in selection of designs. *Two laboratory credits, first term. Required of Sophomores in Home Economics and of second-year students in Education Course, Home Economics option. Prerequisites: Home Economics Ia and Ib.*

XVIIIb. Continuation of XVIIIa. *One recitation and two laboratory credits, second term. Required of Juniors in Home Economics, and in Teacher-Training*

Course in Home Economics, and of second-year students in Education Course, Home Economics option.

XXI. Home Administration.—Work in a Practice Cottage.—Application of principles of scientific management in the furnishing and care of home, planning and executing daily and weekly routine for group of six, division of income and making of budgets; planning and serving meals on given cost, and consideration of service for simple and more formal occasions. *Three laboratory credits, first term. Required of Seniors in Home Economics, and in Teacher-Training Course in Home Economics. Prerequisite: Home Economics VIII.*

XXV. Costume Design.—A study of principles of design and their application to dress. Study of form, line and color combinations in their relation to the individual. Practice in handling and draping fine material. Study of color and textiles as related to different types of hat and the making and trimming of these types. *Three laboratory credits, second term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics. Prerequisite: XVIIIb.*

XXVI. Textiles and Clothing Economics.—Artistic and economic considerations in selection and purchase of materials for clothing and household furnishing, with emphasis on identification of textile materials, as to price, width, and weave; economic and social conditions which affect their value. Study of clothing budgets. *Two laboratory credits, first term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics. Prerequisites: Home Economics Ia and Ib.*

XXVII. Applied Household Mechanics.—The construction, care and use of the various pieces of machinery used in the home for heating, lighting, ventilating, cleaning, cooking and sewing. *One lecture and one laboratory credit, second term. Required of Sophomores in Home Economics, and of first-year students in Education Course, Home Economics option.*

XXVIII. Catering.—Cooking for special occasions.—Afternoon teas, receptions, clubs, parties, buffet lunches, banquets. *Three laboratory hours, second term. Elective for Juniors.*

XXIX. Lunch-Room Cookery.—Cookery; marketing; buying; menu planning; service; supervision; accounting; equipment; field work service. *Three laboratory hours, second term. Elective for Juniors.*

Mathematics

PROFESSOR TYLER, ASSISTANT PROFESSOR BILLS

Subjects

I. College Algebra.—*Four recitation hours, two and one-half credits, nine weeks, first term. Required of Freshmen in Engineering and Applied Science and of first-year students, Education Course, Science option. Professor Tyler, Assistant Professor Bills.*

II. Trigonometry.—*Four recitation hours, two and one-half credits, nine weeks, first term. Required of all Freshmen except Home Economics students, for whom it*

is optional: also required of first-year students, Education Course, Science and Agricultural options. Professor Tyler, Assistant Professor Bills.

III. Higher Algebra.—*Five recitation credits, nine weeks, first term. Required of Freshmen in Agriculture and of first-year students, Education Course, Agricultural option, and optional for students in Home Economics.* Assistant Professor Bills.

VIIIa. Trigonometry completed and Analytics.—*Five recitation credits, second term. Required of Freshmen in Engineering and of first-year students, Education Course, Science option.* Professor Tyler, Assistant Professor Bills.

VIIIb. Trigonometry completed and Elementary Analysis.—*Four recitation credits, second term. Required of Freshmen in Applied Science.* Assistant Professor Bills.

X. Calculus.—*Five recitation credits, first term. Required of Sophomores in Engineering.* Professor Tyler.

XI. Calculus (completed).—*Five recitation credits, second term. Required of Sophomores in Engineering.* Professor Tyler.

XIV. Spherical Trigonometry.—*One recitation credit, first term. Elective as an extra.*

XV. Solid Analytics.—*One recitation credit, second term. Elective as an extra.*

Military Science and Tactics

CAPTAIN KNIGHT

All male college students are required to take military instruction during the first two years unless excused by reason of physical disability. During this period they are enrolled in the Reserve Officers' Training Corps. During the remainder of their period in college they may continue in the military department or elect other courses.

The primary object of the Reserve Officers' Training Corps is to qualify, by systematic and standard methods of training, young men for reserve officers of the United States Army. The system of instruction as prescribed presents to the students a standardized measure of that military training which is necessary in order to prepare them to perform intelligently the duties of commissioned officers in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers.

Under the provisions of the National Defense Act of June 3, 1916, as published in special Regulations, No. 44, War Dep't., 1919, any student who has completed two academic years of service in the Reserve Officers' Training Corps, and has been selected for further training by the president of the institution and by its professor of

military science and tactics, and who has agreed in writing to continue in said Corps for the remainder of his period in college, devoting five hours per week to the prescribed military training, and who further agrees to take the prescribed camp training, may be furnished with an allowance for subsistence amounting to about 40 cents a day.

Subsistence while in camp, and railroad fare to and return will be paid by the United States. Extra articles of uniform necessary for camp will also be furnished.

Upon the completion of all required work in connection with the Reserve Officers' Training Corps graduates will be commissioned as reserve second lieutenants of the Army.

When a unit of the Reserve Officers' Training Corps has been established at an institution, the Quartermaster's Corps of the Army will issue or provide one complete olive drab regulation uniform for each student undergoing instruction. It is also the policy of the War Department to issue for each unit of the R. O. T. C. the latest model rifle and equipment, in-so-far as the supply and the appropriations of Congress permit.

This has already been done to the extent of supplying the college with the model of 1917 rifle, the complete infantry equipment, one Browning Machine Gun, and one Browning Automatic Rifle.

UNIFORM.—The following articles of uniform clothing will be issued by the Quartermaster Corps of the Army, free of charge, to each student enrolled in the Reserve Officers' Training Corps:

- 1 Coat, Wool O. D.
- 1 Breeches, Wool O. D.
- 1 pr. Shoes, Russet.
- 2 Shirts, Flannel O. D.
- 1 pr. Leggings, Canvas.
- 1 Cap, Service.
- 1 Belt, waist.
- 1 Ornament, Cap.
- 2 Ornaments, Collar.

This uniform must be worn during all military instruction, and may be worn at other times as desired. The wearing of clothing part uniform and part civilian is prohibited. Articles lost or unnecessarily worn or damaged must be replaced by the student at his

own expense. This uniform remains the property of the United States and must be turned in by the student during the summer vacation and upon withdrawing from college.

Subjects

I. Military Art.—Practical.—(a) *First Year*. Physical drill; Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad, Company, and Battalion close and extended order; preliminary instruction in sighting and aiming drills; gallery practice; nomenclature and care of rifle and equipment; ceremonies; manuals; bayonet combat; intrenchments; first-aid instruction; target practice. (b) *Second Year*. Same as (a), combat and collective firing in indoor ranges if possible; signaling; work with sand table. (c) *Third Year*. Duties consistent with rank as cadet officers or non-commissioned officers in connection with (a) and (b); military sketching. (d) *Fourth Year*. Same as (c). *Two exercises of one hour each, counting as one credit for each term. Required of all male Freshmen and Sophomores, and all Juniors and Seniors taking the advanced course in the Reserve Officers' Training Corps.*

II. Military Art.—Theoretical.—*First Year*. Theory of target practice, military organization; service of information; service of security; map reading; lectures on general military policy as shown by military history of the United States and military obligation of citizenship; combat (to be illustrated by small tactical exercises); Infantry Drill Regulations, to include School of the Company; camp sanitation for small commands; personal hygiene. *One recitation credit thruout the year. Required of all Freshmen.*

IV. Military Art.—Theoretical.—*Second Year*. Infantry Drill Regulations, to include School of Battalion and Combat; Small Arms Firing Regulations; lectures as in II; map reading; marches and camps; camp sanitation and camp expedients; military history (recent); service of security and information (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping). *One recitation credit thruout the year. Required of all Sophomores.*

V. Military Art.—Theoretical.—*Third Year*. Minor tactics; field orders; map maneuvers and problems; company administration (papers and returns); property accountability; method of obtaining supplies and equipment; military history; elements of international law. *Three recitation credits thruout the year. Required of all Juniors in the Reserve Officers' Training Corps.*

VI. Military Art.—Theoretical.—*Fourth Year*. Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings; international relations of America; gradual growth of the principles of international law embodied in American diplomacy, legislation, and treaties; psychology of war; general principles of strategy only, planned to show the intimate relationship between the statesman and the soldier; military history and policy; the rifle in war. *Three recitation credits thruout the year. Required of all Seniors in the Reserve Officers' Training Corps.*

Modern Languages

PROFESSOR JAECK

FRENCH

I. Elementary French.—Grammar, dictation, pronunciation, composition, conversation, reading of easy prose and poetry. *Three recitation credits thruout the year.*

II. Intermediate French.—Reading, composition, conversation, first semester; Introductory Scientific French, second semester. *Three recitation credits thruout the year.*

III. Advanced Scientific French. — *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Literary French.—Critical study of literary masterpieces both modern and classical. *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

GERMAN

I. Elementary German.—Grammar, dictation, pronunciation, composition, reading of easy texts in prose and poetry. *Three recitation credits thruout the year. Required of students in Applied Science when German is not offered for entrance.*

II. Intermediate German.—Reading, composition, conversation, first semester; Introductory Scientific German, second semester. *Three recitation credits thruout the year. Required of Sophomores in Applied Science.*

III. Advanced Scientific German. — *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Literary German.—Critical study of literary masterpieces both modern and classical. *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

SPANISH

I. Elementary Spanish.—Grammar, dictation, pronunciation, composition, conversation, reading of easy texts in prose and poetry. *Three recitation credits thruout the year.*

II. Intermediate Spanish.—Reading, composition, conversation, first semester; Industrial and Commercial Spanish, second semester. *Three recitation credits thruout the year.*

III. Modern Spanish Literature.—Critical study of modern masterpieces in the drama and novel. *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Classical Spanish Literature. — *Three recitation credits thruout the year. Elective for students who have completed I, II, and III or their equivalents.*

ITALIAN

I. Elementary Italian.—Grammar, dictation, pronunciation, composition, reading of modern texts in prose and poetry. *Three recitation credits thruout the year. Elective for students who have presented the requisite two units of modern language for entrance and who have had in addition at least one year of modern language in College.*

II. Classical Italian Literature.—Critical study of literary masterpieces of the classical period. *Three recitation credits thruout the year. Elective for students who have completed I or its equivalent.*

Music

ASSISTANT PROFESSOR PECK

I. Elementary Harmony and History of Music.—Two hours a week are devoted to the study of harmony including musical notation, formation of triads, and chords of the seventh. The third hour is devoted to the history of music from early music thru that of Beethoven. Lectures, assigned readings, reports, musical illustrations. *Three recitation credits, first term.*

II. Harmony and Appreciation.—The work in harmony is a continuation of subject I, leading to elementary original work in composition. The study of the appreciation of music is intended to develop musical perception or the ability to listen to good music intelligently. Musical theory, musical forms, study of the lives and works of the greatest composers and their relation to the development of music. *Three recitation credits, second term. Open to students who have completed I.*

III. The Oratorio and the Symphony.—A study of the development of these two forms. Students taking this subject should be able to sing and play simple music. *Two recitation credits, first term. Open to students who have completed I and II or their equivalent.*

IV. Masters in Music.—A detailed study of the works of certain of the greatest composers. Lectures, analyses, and assigned readings. *Two recitation credits, second term. Open to students who have completed one full year in music.*

Physics

PROFESSOR ANDERSON, ASSISTANT PROFESSOR COGGINS

Physics is regarded as a fundamental science, a mastery of which is essential to success in engineering or in any calling involving the application of scientific methods and processes. Therefore emphasis is placed upon the practical applications of the principles involved, not only for the purpose of affording preparation for future work, but with the idea of stimulating the student to an interest in his professional work.

At the same time, some effort is made to present the subject from the standpoint of a pure science, and to instill in the student a respect

for scientific methods, and to prepare him for advanced work in research and investigation. Advanced mathematics is employed, wherever its use is deemed necessary for a rigorous and complete development of the subject.

Instruction is given in both class-room and laboratory, the two methods being closely correlated. The department is equipped with many pieces of high-grade apparatus. In mechanics, special attention is given to problems involving mass, force, motion and energy.

In the laboratory of heat measurements, the problems involved in the transformation of heat into energy are strongly emphasized.

In light, the department is able to carry on work of the usual college grade, being well equipped with high-grade photometers, spectrometers, etc.

The laboratory of electrical measurements is particularly well equipped for the carrying on of work in this line.

Subjects

I. Descriptive Physics.—Designed for students in Agriculture and Home Economics. The subject furnishes an excellent foundation for further work in physics. *Five recitation credits, second term. Required of Sophomores in Agriculture, Applied Science, and Home Economics, and of second-year students, Education Course, Agricultural option.*

II. General Physics.—A mathematical treatment of the subject, in which a knowledge of elementary physics is presupposed. *Four recitation credits, thruout the year. Required of all Sophomores in Engineering, and of second-year students, Education Course, Science option.*

III. Laboratory Physics.—A series of physical measurements intended to teach students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits, thruout the year. Required of Sophomores in Engineering, and of second-year students, Education Course, Science option.*

V. Electrical Measurements.—A laboratory course in electrical measurements in which instruments of precision are used. The study of such instruments as the potentiometer and its use in the calibration of ammeters and voltmeters, the Decade Box Bridge, Kelvin Double Bridge, and the measurement of the capacity of condensers and self-induction of coils. *One and one-half laboratory credits, first term. Required of Seniors in Electrical Engineering.*

VI. Principles of Illumination.—A study of different sources of light, photometrical measurements, and the principles of illuminating engineering. *One recitation credit and one and one-half laboratory credits, first term. Required of Seniors in Electrical Engineering.*

Physical Education

MR. KEANEY, MISS HEMPHILL

The aim of the department of physical education is to give those students taking work in the department such scientific physical training as to best develop a normal body. Every student in the institution is required to take at least two hours' work per week in physical training.

Recent events have shown the great need of better physical development among the youth of our country, together with more scientific and thoro application of the methods of physical education in our American colleges. During the past year, this college has required practically every student to take regularly some form of physical training.

The following lines of activity will be conducted:

Football.—Commencing with the opening of the College year in September and continuing until the latter part of November and during the last six weeks of the college year, work will be conducted in this sport. Aside from the Varsity team, class teams will be developed. All male students are urged to take part in this work.

Basketball.—Following the close of the football training in November, basketball work will be commenced and will continue until the latter part of March. Varsity and class teams will be developed as in football.

Baseball.—Work in baseball is commenced with practice in the gymnasium the middle of February and will continue with outdoor work when weather permits until the end of the college year. Varsity and group teams will be developed.

Boxing.—This form of exercise requires a rigorous course in calisthenics to develop and strengthen the entire physique.

Cross Country.—Cross country work will be started in the Fall and continued until the Thanksgiving recess. The country surrounding the college is ideal for this line of work, which should prove of interest to many students.

Track.—Training in track work will begin on the board running track after the Christmas holidays and will be continued on the cinder track in the spring as weather permits. Some form of track athletics should be participated in by all male students.

Physical Training.—A.—For men.—Carefully planned work in physical training for the individual is conducted thruout the year. One credit, covering two hours per week, is required of all students during attendance at college. Work in the above sports may be accepted at the discretion of the physical director. Each student will be required to obtain a suit as prescribed by the director.

B.—For women.—All women students are required to take gymnasium work unless excused by a physician's certificate. The uniform for the work consists of

a pair of black wool bloomers, a white middy blouse with black tie, black stockings and white gymnasium shoes. *One laboratory credit thruout the year. Required of all women students.*

Psychology and Education

PROFESSOR CARROLL, PROFESSOR BIRD, MR. ABBOTT

I. History of Education.—A study of the growth of American educational institutions and practices with the purpose of giving a view of present-day problems in the light of their historical evolution. Sufficient attention is given to the history of education in Europe to indicate influences affecting American developments.

Following the general course in the history of education the last third of the term is given to the special history of the educational movement in the line of work in which the student is specializing:

- a. Agricultural Education (see Vocational Education I).
- b. Home Economics (to be arranged).
- c. Science (to be arranged).

Three recitation credits, second term. Required in Applied Science, Home Economics and Teacher-Training Courses. Mr. Abbott.

II. Principles of Secondary Education.—The secondary school involving a study of its general character and purpose, the school population, the materials of instruction, methods and management. *Three recitation credits, first term. Required in Applied Science, and in Teacher-Training Courses. Mr. Abbott.*

III. Rhode Island Education.—A study of the educational movement in Rhode Island, together with the law of the State in relation to the schools. School Administration, School Finance, Professional Ethics, Organization of Vocational Education under Federal law. *Three recitation credits, second term. Required in Applied Science, and in Teacher-Training Courses. Professor Carroll.*

IV. Educational Psychology.—Structure and functions of mental life; simple experiments. *Three recitation credits, first term. Required in Applied Science, Home Economics and Teacher-Training Courses. Professor Bird.*

V. Educational Psychology.—A study of individual and group behavior in relation to the learning process; the nervous system as the organ of behavior, educational significance of unlearned tendencies to action, the functions of feeling, habit, imagination, and rational thinking in conduct, economy in securing retention of ideas, pedagogical applications of the psychology of attention and interest, conditions necessary for effective thinking. Lectures, discussions and simple experiments. *Three credits, second term. Elective in Applied Science, Home Economics and Teacher-Training Courses. Professor Bird.*

VI. Educational Psychology.—The psychology underlying principles of teaching with special reference to secondary subjects, school athletics and clubs, the use of educational and intelligence tests and measurements, methods of detecting vocational aptitudes. *Elective. One credit, second term. Professor Bird.*

Vocational Education

MR. ABBOTT, MRS. REED

The object of the subjects offered in Vocational Education is to provide the necessary professional training for students in the Departments of Agriculture and Home Economics who are preparing themselves to teach these vocational subjects in the schools of the State.

Subjects

I. History of Agricultural Education.—A survey of the rise and development of elementary, secondary and collegiate agricultural education thruout the United States. *Three recitation credits, last six weeks, second term, Junior year.* For the work of the first twelve weeks of the term, see Psy. and Ed. I. *Required of students in Agricultural Teacher-Training Course.* Mr. Abbott.

II. Practice Teaching Agriculture.—Practical class-room experience in the conducting of recitations and laboratory work in Secondary Agriculture under supervision. *Three recitation credits, first or second term, Senior year.* *Required of students in Agricultural Teacher-Training Course.* Mr. Abbott.

IV. Special Methods in Agriculture.—A study of the Smith-Hughes Law in so far as it relates to Vocational Agricultural Education. Preparation and presentation of the subject matter in the class-room and laboratory. Arranging courses of study, preparation of lesson plans, conducting of field trips and supervision of Home Project Work. *Three recitation credits, second term, Senior year.* *Required of students in Agricultural Teacher-Training Course.* Mr. Abbott.

V. Teaching Home Economics.—A study of methods, curricula, and equipment, and the making of lesson plans; observations and criticisms followed by supervised teaching. *One recitation and one laboratory credit, first term.* *Elective for Seniors in Home Economics, and required of Seniors in Teacher-Training Course, Home Economics option.* Mrs. Reed.

Zoölogy

PROFESSOR BARLOW

The work in this department is designed to meet the needs of two classes of students: those who are interested in the economic aspect of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic aspects of the different orders. Much time is given to entomology, and in this subject special attention is

given to injurious forms. For those who are to be teachers, a thorough training is given in the morphology and classification of animals as a preparation for the more special subjects that follow. In these, attention is directed to the habits and relations of animals, which are studied both in the field and in the laboratory.

The laboratory is equipped with a series of charts, valuable models, and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about one hundred cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes. The necessary instruments for laboratory work can be procured at small cost at the college store.

Subjects

I. Invertebrate Zoölogy.—A subject in the morphology and classification of invertebrates. *Given in alternate years; next given in 1922. One recitation and three laboratory credits, second term. Option for Juniors and Seniors in Applied Science. Required of second-year students in Education Course, Science option.*

II. General Zoölogy.—Lectures and field work on the distribution and habits of animals. Special studies of local areas and typical animal communities. *Given in alternate years; next given in 1922. One and one-half laboratory credits, second term. Option for Seniors in Applied Science.*

IV. Economic Entomology.—*One laboratory credit and three recitation credits, second term. Given in alternate years; next given in 1921. Option for Juniors in Agriculture and Applied Science.*

V. General Entomology.—*Two laboratory credits and one recitation credit, first term; two laboratory and two recitation credits, second term. Elective for Juniors and Seniors in Applied Science.*

VI. Systematic Entomology.—*Three or five laboratory credits per week, throughout the year. Elective for those who have taken or are taking Zoölogy V.*

VIIIa. Histology.—The usual methods of imbedding and sectioning tissues and the study of the principal organs by these methods. *Three laboratory credits, first term. Option for Juniors and Seniors in Applied Science and Home Economics. Elective in Teacher-Training Courses. Given in alternate years; next given in 1922.*

VIIIb. Embryology.—Laboratory and text-book study of the development of vertebrates. *Two recitation credits and one laboratory credit, second term. Given in alternate years; next given in 1921. Required of second-year students, Education Course, Home Economics option. Option for Seniors in Applied Science.*

IX. Bird Life.—Field studies of native birds. *One and one-half laboratory credits, second term. Elective.*

Xa. General Zoölogy. Introductory Course. Structure and physiology of type forms. *Two recitation and two laboratory credits, first term. Required of first-year students in Education Course, Home Economics and Science options; of second-year students in Education Course, Agricultural option, and of Sophomores in Agriculture, Applied Science, and Home Economics.*

Xb. Anatomy and Physiology.—The structure of higher vertebrates and human physiology. *Two recitation and two laboratory credits, second term. Required of first-year students in Education Course, Home Economics and Science options, of second-year students, Agricultural option, and of Sophomores in Agriculture, Applied Science, and Home Economics.*

II. SHORT COURSE IN AGRICULTURE

To meet the needs of those who find it out of their power to undertake a four years' college course, but who, nevertheless, desire to increase their efficiency on the farm, the college offers what is known as a short course in agriculture. Students may with advantage take only a part of the course if unable to remain for the whole time.

It is required of applicants for this course that they be at least eighteen years of age at entrance, that they shall have completed at least the common school, that they shall have a definite purpose in mind in applying for the course, and *that within three weeks after entrance they shall satisfy their teachers that they are sufficiently mature, sufficiently earnest, and sufficiently capable to warrant their remaining for the course.* Every effort will be made to guard this course from becoming a refuge for the idle, the purposeless, and therefore the unsuccessful, and to that end drastic measures of elimination will be used whenever necessary, but especially at the end of the first three weeks of the year.

The course is in no case supposed to serve as a substitute for the regular work of the college either in character or in scope of the subject-matter presented, and does not lead, directly or indirectly, to a degree, a certificate only being granted. Neither is it to be considered as preparatory to the college work. Its particular function is to give, in the shortest, most direct way possible, certain definite, specific, and perhaps uncorrelated information which will be of immediate value on the farm.

In order that seriousness of purpose as regards an agricultural occupation may be assured from those taking the agricultural short course, no student will be permitted to register for the second year's work who has not had at least six months' practical experience on a

farm. This experience should be obtained upon a farm making a specialty of the line of work which the student intends to follow.

The tabulated course follows:

First Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Botany A—Plant Life.....	1 [2½]	Botany A—Plant Life.....	1 [2½]
Agronomy A—Soils and Fertilizers....	3	Agronomy A—Soils and Fertilizers....	3
An. Husb. B—Stock Judging.....	[1]	An. Husb. B—Stock Judging.....	[1]
An. Husb. A—Breeds.....	2	An. Husb. A—Breeds.....	1
An. Husb. H—Poultry.....	2 [1]	An. Husb. H—Poultry.....	1 [2]
Zoölogy A—Economic Entomology....	3	Hort. C—Plant Propagation.....	1 [1]
Agronomy E—Farm Accounts.....	3	Agronomy E—Farm Accounts.....	3
Practical Work.....	[2½]	Practical Work.....	[2½]
Drill and Military Science.....	1 [1]	Drill and Military Science.....	1 [1]
Physical Training.....	[1]	Physical Training.....	[1]

Second Year

FIRST TERM	CREDITS	SECOND TERM	CREDITS
Agronomy B—Farm Crops.....	3	Agronomy B—Farm Crops.....	3
An. Husb. C—Dairy Practice.....	1 [3]	Hort. A—Vegetable Gardening.....	3 [1½]
An. Husb. D—Feeding Animals.....	3	An. Husb. E—Principles of Breeding..	2 [1]
Hort. B—Fruit Culture.....	3 [1]	Hort. B—Fruit Culture.....	2 [1]
An. Husb. G—Care of Animals.....	3	Agronomy F—Marketing Farm Pro-	2
Agronomy C—Farm Management.....	3	ducts.....	
Practical Work.....	[2½]	Agronomy D—Farm Machinery.....	1 [2]
Drill and Military Science.....	1 [1]	Practical Work.....	[2½]
Physical Training.....	[1]	Drill and Military Science.....	1 [1]
		Physical Training.....	[1]

Subjects

AGRONOMY

A. Soils and Fertilizers.—An elementary course on the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Three recitation credits, first year.*

B. Crops and Rotations.—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various-types of farms. *Three recitation credits, second year.*

C. Farm Management.—An elementary course on the principles of farm management, equipment, cost of production. *Two recitation credits, first term, second year.*

D. Farm Machinery.—Care and repair of farm implements. *One recitation and two laboratory credits, second term, second year.*

E. Arithmetic and Farm Accounts.—A review course in arithmetic. Types of farm accounts, inventories, project accounts, complete set of farm accounts, special production records. *Three recitation credits, first year.*

F. Marketing of Farm Products.—Kinds of markets, methods of sale, standardization of products, co-operative associations for marketing. *Two recitation credits, second term, second year.*

ANIMAL HUSBANDRY

A. Types and Breeds.—Breeds of horses, cattle, sheep, and swine. Emphasis is placed on the type best fitted to the agriculture of New England. *Two recitation credits, first term; one recitation credit, second term, first year.* Professor Ladd.

B. Stock Judging.—Scoring of individuals and judging the various classes of animals and their adaptability to different purposes, as cattle for milk or beef production, horses for driving or draft. *One laboratory credit, first year.* Professor Ladd.

C. Dairy Practice.—Babcock test for dairy products, production of sanitary milk, and butter making. *One recitation and three laboratory credits, first term, second year.* Assistant Professor Burdick.

D. Principles of Feeding.—Compounding rations. *Three recitation credits, first term, second year.* Professor Ladd.

E. Principles of Breeding.—A study of the selection of animals, heredity, and variation. *Two recitation credits and one laboratory credit, second term, second year.* Professor Ladd.

G. Live Stock Care and Sanitation.—Housing, care, and management of farm animals. Practical directions for handling of stock on the farm. *Three recitation credits, first term, second year.* Professor Ladd.

H. Poultry Keeping.—Study, demonstrations, and work in all of the practical branches of the poultry department. *Two recitation credits and one laboratory credit, first term; one recitation and two laboratory credits, second term, first year.* Mr. Brett.

HORTICULTURE

A. Vegetable Gardening.—Fundamental principles of vegetable growing. Practical work in cold frames, hotbeds, and garden planting. *Three recitation credits, and one and one-half laboratory credits, second term, second year.*

B. Fruit Culture.—Study of fruits; propagation; planning fruit gardens and plantations; harvesting and packing; care, including methods used in combating insect pests and plant diseases. Preparation and application of fungicides and insecticides. Study of nozzles, pumps, etc. *Three recitation credits and one laboratory credit, first term; two recitation credits and one laboratory credit, second term, second year.*

C. Propagation of Plants.—A study of the different methods of plant propagation. *One recitation and one laboratory credit, second term, first year.*

BOTANY

A. Plant Life.—Elementary agricultural botany.—*Two and a half laboratory credits and one recitation credit, thruout the year, first year.*

ZOÖLOGY

A. Elementary Economic Zcölogy.—Injurious insects are chiefly studied. *Three recitation credits, first term.*

MILITARY SCIENCE AND TACTICS

All male college students are required to take military instruction during the first two years unless excused by reason of physical disability. During this period they are enrolled in the Reserve Officers' Training Corps.

Subjects

I. Military Art.—Practical.—(a) *First Year.* Physical drill; Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad, Company, and Battalion close and extended order; preliminary instruction in sighting and aiming drills; gallery practice; nomenclature and care of rifle and equipment; ceremonies; manuals; bayonet combat; intrenchments; first-aid instruction; target practice. (b) *Second Year.* Same as (a) combat and collective firing in indoor ranges if possible; signaling; work with sand table. *Two exercises of one hour each, counting as one credit for each term.*

II. Military Art.—Theoretical.—*First Year.* Theory of target practice, military organization; service of information; service of security; map reading; lectures on general military policy as shown by military history of the United States and military obligation of citizenship; combat (to be illustrated by small tactical exercises); Infantry Drill Regulations, to include School of the Company; camp sanitation for small commands; personal hygiene. *One recitation credit thruout the year.*

IV. Military Art.—Theoretical.—*Second Year.* Infantry Drill Regulations, to include School of Battalion and Combat; Small Arms Firing Regulations; lectures as in II; map reading; marches and camps; camp sanitation and camp expedients; military history (recent); service of security and information (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping). *One recitation credit thruout the year.*

PHYSICAL EDUCATION

The aim of the department of physical education is to give those students taking work in the department such scientific physical training as to best develop a normal body. Every student in the institution is required to take at least two hours' work in physical training.

PRACTICAL WORK

Every student enrolled in the agricultural short course is required to perform at least five hours of practical work each week. The object of this work is to develop good practice as well as theory. No pay is given for this work and neglect to properly perform the assigned tasks will be considered as sufficient ground to debar the student from the institution. Written reports are required covering all phases of the work undertaken.

At the beginning of the year the student is allowed to choose work along the line in which he is particularly interested.

Work may be elected in any of the following lines: Care of Dairy Cattle, Calves, Sheep, Poultry, Orchard Management, Greenhouse work with Vegetables or Flowers.

Student Organizations

Agricultural Club

LAWRENCE A. RECORDS	President
ISAAC T. SHERMAN	Vice-President
SENIOR WADE	Treasurer
GEORGE L. PARKER	Secretary

Chemical Society

JAMES P. O'BRIEN	President
HAROLD BLOXHAM	Secretary
ROCCO PEZZULLO	Treasurer

Debating Society

IRVING LESTER CHURCHILL	President
NORMA DORIS KINNE	Vice-President
	Secretary-Treasurer

Dramatic Club

HENRY FREDERICK BAACKE	President
DORIS DATSON	Secretary
HAROLD J. H. BAKER	Treasurer

Glee Club

DR. JULES JORDAN	Director
JOHN FREMONT NYE	Manager

Tau Kappa Alpha

PROFESSOR HERMAN CHURCHILL	President
EDWIN HAROLD COKER	Secretary-Treasurer

The Beacon

IRVING LESTER CHURCHILL	Editor-in-Chief
HAROLD F. GEE	Managing Editor
WADE ALLEN MOREHOUSE	Business Manager

Student Council

HENRY FREDERICK BAACKE	President
LAWRENCE A. RECORDS	Vice-President
SAMUEL MCKEE	Secretary
MARTHA SMITH	Treasurer

Young Men's Christian Association

EDWIN HAROLD COKER.....	President
IRVING LESTER CHURCHILL.....	Secretary
WALTON BUTTERWORTH.....	Treasurer

Young Women's Christian Union

NORMA DORIS KINNE.....	President
FLORA M. ANDERSON.....	Vice-President
HELEN TABOR.....	Secretary
EMILY MARTIN.....	Treasurer

Women's Athletic Association

MARTHA SMITH.....	President
GLADYS PECKHAM.....	Secretary
LILLIAN SMITH.....	Treasurer

Men's Athletic Association

GRANT HAMBLETT POTTER.....	President
BERNARD AMBROSE CONNOLLY.....	Vice-President
HAROLD EARL WHITTAKER.....	Secretary

Battalion Organization, 1920-1921

The Rhode Island State College Infantry R. O. T. C. Unit has been organized into a provisional battalion consisting of a Headquarters Detachment and two provisional companies.

The Battalion is commanded by a major and he has a first lieutenant as adjutant.

The Headquarters Detachment is commanded by the Battalion Adjutant and consists of 1 Battalion Sergeant-Major; 1 First Sergeant (Drum Major); 1 Band Leader, and a Band Section.

Company A is made up of the Juniors and Sophomores enrolled in the Military Department. The company is commanded by a captain. The other officers of the company are 1 first lieutenant, second in command, and 2 second lieutenants, platoon commanders. Each of the two platoons in this company is organized as follows: 1 platoon sergeant; 2 sergeants, section leaders and platoon guides; 2 corporals, section guides; 2 extra corporals, and three squads of 1 corporal and 9-10 privates each. There is also a permanent first sergeant with this company.

Several considerations lead to this organization:

(1) The necessity for conforming to the War Department Tables of Organization as far as was practicable. As the small number of Juniors and Sophomores prevented us from having full-strength platoons in this company, it was decided so to organize the company that it could be utilized as a full-strength platoon for demonstration purpose or for field work. For this purpose practically all we have to do is to designate the platoons as sections; put them together and they form the full-strength platoon of 6 squads.

(2) The necessity for placing Juniors and Sophomores together in one company so that their progress might not be hindered by the new students.

(3) The necessity for giving all Juniors and Sophomores an opportunity to develop and exercise leadership in the capacity of officers and non-commissioned officers. This is done by detailing different men from Co. A each drill period to serve as officers and non-commissioned officers with Co. B (Freshman Company). These

details are made a week in advance so that men will have an opportunity to "brush up" in the subjects to be covered on drill day. This consideration made it necessary to place 10 or 11 students in each squad so that when details to Co. B are made the squads in Co. A are not so far depleted in strength as to preclude their acting as squads.

Company B is commanded by a captain and he has a first lieutenant as second in command. There are no other permanent officers and no non-commissioned officers in this company, these being furnished each drill day by detail from Co. A. The company consists of two full-strength platoons of six squads each.

Roster of Officers and Non-commissioned Officers of Battalion Commandant

CAPTAIN ALFRED S. KNIGHT, INFANTRY, U. S. A.

ASSISTANT INSTRUCTORS

Master Sergeant.....ORVILLE D. GROESBECK, D. E. M. L., U. S. A.
Sergeant.....JAMES T. JOHNSON, D. E. M. L., U. S. A.
Sergeant.....JOHN J. FARRELL, D. E. M. L., U. S. A.

CADET OFFICERS AND NON-COMMISSIONED OFFICERS.

Headquarters Detachment

Major.....WALTER W. MOORE
Adjutant.....1st Lieut. WILLIAM H. SIMAS
Sergeant Major.....HAROLD F. GEE
Band Leader.....ALFRED C. BARTON, JR.

Company A

Captain.....FRANK H. TOTMAN
1st Lieut.....MARSDEN P. EARLE
1st Sergeant.....JAMES B. BYRNES

1st Platoon

2nd Lieut. FREDERICK C. REYNOLDS
Sergeant WATSON C. GILLIS
Sergeant WILLIAM S. FORT
Sergeant JOHN H. REED
Corporal JOHN C. HOWLAND
Corporal GEORGE S. MOORHOUSE
Corporal EARL S. EDWARDS
Corporal VASLET L. HOWE
Corporal SENIOR WADE
Corporal ALBERT F. HOLBURN

2nd Platoon

2nd Lieut. ALVAN J. ALLEN
Sergeant LYNDON R. RHODES
Sergeant HAROLD E. ADAMS
Sergeant EDWARD H. BARR
Corporal GORDON L. HARRINGTON
Corporal ARTHUR N. HAMMARLUND
Corporal IRVING L. CHURCHILL
Corporal FREDERICK H. TITCHENER
Corporal HAROLD C. WARDEN
Corporal HAROLD E. MARTIN

Company B

Captain.....	GEORGE A. CHANDLER
1st Lieut.....	JAMES H. HOLDEN

PRIZES AND HONORS

Scholarship Honors

PHI KAPPA PHI

In the spring of 1913 was organized at Rhode Island State College a chapter of Phi Kappa Phi, a national scholarship society, whose purpose, as stated in the preamble of the constitution, is "to provide a Fraternity, dedicated to the Unity and Democracy of Education, and open to honor graduates of all departments of American Universities and Colleges."

The national society was founded at the University of Maine, in 1897. Since then, the number of chapters has increased to twenty-two, with a total membership of more than 4,000. The total membership of the local chapter to date is 81. The number of active members of the chapter at present is 15.

Undergraduates recently elected to membership are:

CLASS OF 1920

Frederic Robinson Briggs	Charles Everett Mason
Whitney Eastman Greene	Esther Wilhelmina Peterson
James Edward Knott, Jr.	Elisabeth Stillman
Herbert Elmer Spink	Amy Ann Whitford
Harold Kenneth Wilder	

CLASS OF 1921

Samuel Allen McKee	James Edward O'Neil
Harold James Hall Baker	Charles Howard Wales

The officers of the Society are:

PROFESSOR HERMAN CHURCHILL.....	President
DR. HAROLD W. BROWNING.....	Secretary
MR. PHILIP WESSELS.....	Treasurer

THE BURCHARD CUP

In 1912 the Honorable Roswell B. Burchard presented to the college a handsome silver cup to be used as a fraternity scholarship trophy. Each year the fraternity or other organized group of students whose average scholarship grade stands highest, wins the honor of having its name inscribed on the cup. When any fraternity has achieved this distinction for three consecutive years, it thereby secures permanent ownership of the cup. The cup is now in the possession of Rho Iota Kappa.

Debate Honors

TAU KAPPA ALPHA

A debating society was organized at Rhode Island State College in 1913 for the purpose of arousing, among the students, interest in intercollegiate debating. During the period from 1911 to 1915, inclusive, an annual debate was held with Massachusetts Agricultural College. In 1916 Rhode Island State College won the decision against New Hampshire State College at Kingston, but after 1916, debate relations with New Hampshire were discontinued. During the period from 1916 to 1919, inclusive, intercollegiate debate activities were omitted on account of the World War.

In the spring of 1916, however, steps were taken to secure a chapter of *Tau Kappa Alpha*. Because of enlistment or graduation of those interested, and because of general inactivity in intercollegiate debate thruout the country, matters were delayed so that the local chapter did not become fully organized until the spring of 1920, following the double debate with Bowdoin College, on May 7.

CHARTER MEMBERS OF TAU KAPPA ALPHA

Daniel Gaskill Aldrich, '16	Solomon Fine, '16
Wayland McColley Burgess, '19	Dean Blenus Fraser, '16
Professor Herman Churchill	David Hood Livingston, ex-'19
Charles Davies Dalzell, '19	Henry Edmond Medbery, '16

DEBATERS ELECTED TO MEMBERSHIP IN TAU KAPPA ALPHA SINCE ORGANIZATION

Carle Muzzy Bigelow, '12	Frank Howard Baxter, '14
Arlo Gordon Adams, '22	Albert Edward Holburn, '22
Israel Caplan, '20	Sidney Joseph Levine, '22
Edwin Harold Coker, '22	David A. Midgley, '23
Howard Bucklin Smith, '20	

ALUMNI DEBATE TROPHY

In 1913 the alumni of the College donated a silver cup to be offered as a trophy for competition between picked teams representing the successive freshman and sophomore classes. Since that time the annual Freshman-Sophomore Debate Contest has served a good purpose in bringing out debaters among the underclassmen. In 1921 the contest was won by Messrs. Chandler, Gee and Smith, of the class of 1923.

BIGELOW DEBATE CUP

In the fall of 1920 Mr. and Mrs. Carle M. Bigelow made manifest their interest in their *Alma Mater* and their appreciation of the value of debate activities by offering a sterling silver cup as an interfraternity debate trophy to be competed for by the fraternities of the College until one of them shall win the contest three years in succession. In the final debate for 1921, the successful contestants were Messrs. Twedell, Tower and Coker, representing *Lambda Chi Alpha*.

Honors Awarded Commencement Day, June 14, 1920

FINAL HONORS FOR FOUR YEARS

HIGH HONORS

James Edward Knott, Jr.
Whitney Eastman Greene
Harold Kenneth Wilder
Amy Ann Whitford
Frederic Robinson Briggs

Charles Everett Mason
Esther Wilhelmina Peterson
Elisabeth Stillman
Herbert Elmer Spink

HONORS

Albert Peckham Sisson

SENIOR HONORS

Franklin Hoxsie Springer
James Edward Knott, Jr.
Arthur Lincoln Clark
Whitney Eastman Greene
Amy Ann Whitford
Frederic Robinson Briggs
Elisabeth Stillman
Herbert Elmer Spink

SOPHOMORE HONORS

Irving Lester Churchill
Helen Louise Tabor
Edwin Harold Coker
Harold Edward Martin
Vinal Norberg Hastings
Helen Stewart Fessenden
Joseph Bernard Byrnes
Norma Doris Kinne

JUNIOR HONORS

Samuel Allen McKee
Harold James Hall Baker
Charles Howard Wales
Joseph Edward O'Neill
Joseph Wallace Peckham
Isaac Thornton Sherman

FRESHMAN HONORS

Miriam Ayer Cargill
Edward Patrick Dunn
George Alfred Chandler
Raymond Maxwell Peckham
Walter Thomas Conefrey
Timothy Edward Geary
Caroline Frances Tabor
Eskil Conrad Johnson
Raymond Atwood Eldredge

Degrees Conferred in 1920

Bachelor of Science

Louise Baker	Whitney Eastman Greene
Dorald Dewey Beasley	Frank Elmer Greenhalgh
Francis Lincoln Biggs	Arthur Edmond Haslam
Frederic Robinson Briggs	Charles Potter Holley
Melvin Hazard Brightman	Albert Sprague Hudson
Roy Porter Call	John Foster Holmes
Emily Catherine Campbell	James Edward Knott, Jr.
Israel Caplan	Rudolph Horton Kohlberg
William Brown Carnie	Leonard James Kwasha
Arthur Lincoln Clark	George Edward Luther
Horace Wilbur Clarke	George Joseph Malloy
Samuel Harry Cohen	Numan Allen Martell
John Jerome Condon	Charles Everett Mason
John William Cruickshank	Maurice Vincent Murphy
Louise Elmore Damon	Kenneth LeRoy Northup
John Lachlan Daneker	Esther Wilhelmina Peterson
William Dawson	Roland Taylor Pihl
Mildred Elizabeth Edwards	Albert Peckham Sisson
George Andrew Fearn	Douglas Beveridge Seabury
Ralph Williams Gibbs	Howard Bucklin Smith
Herbert Elmer Spink	Ada Elizabeth Whitford
Franklin Hoxsie Springer	Amy Ann Whitford
Elisabeth Stillman	Vernon James Wilbourn
Elsie Law Thackray	Harold Kenneth Wilder
William Theodore Tweedell	John Douglass Wiley
Anthony Venezia	Victor Simon Wittman

Master of Science

Bertha May Heath, B. S.

Civil Engineer

Charles Varnum Johnson, B. S.

Honorary Degrees

Master of Science

Harriet Lathrop Merrow

Doctor of Laws

Frederick Rueckert

Students

Graduates

Gross, Francis Philip (Dartmouth, B. S., 1920) Appl. Sci.	Kingston
Keegan, Leslie Arthur (R. I. S. C., B. S., 1919) Agr.	Kingston
Mather, William (Mass. A. C., B. S., 1919) Appl. Sci.	Kingston
Tibbetts, Helena A. M. (Simmons, B. S., 1918) Appl. Sci.	Kingston

Seniors.

Anderson, Flora Mcpherson, Home Econ.	Newport
Baacke, Henry Frederick, Appl. Sci.	Arlington
Baker, Harold James Hall, Agr.	Westerly
Bogosian, Harry Der, Civil Eng.	Providence
Brightman, Francis Pierce, Elec. Eng.	Hopkinton
Butler, Rose Alicia, Education.	Newport
Campbell, Mary Catharine, Home Econ.	Providence
Carr, Rose Mary, Appl. Sci.	Providence
Davis, Elizabeth Edith, Home Econ.	Providence
Eastwood, Edmund Cecil, Agr.	Providence
Gerstle, Gladys Darling, Home Econ.	Woonsocket
Holley, Albert Henry, Chem. Eng.	Providence
Kohlberg, Esther Lucile, Home Econ.	Barrington
Maloney, John Joseph, Elec. Eng.	Pawtucket
Martelli, Pasquale, Civil Eng.	Essex, Conn.
McKee, Samuel Allen, Mech. Eng.	Palmerton, Pa.
Messerlian, Leon John, Chem. Eng.	Providence
Moore, Walter Webster, Agr.	Providence
O'Brien, James, Appl. Sci.	Woonsocket
O'Connell, Howard Joseph, Agr.	Providence
O'Neill, Joseph Edward, Civil Eng.	Brockton, Mass.
Palmer, Earl Geer, Elec. Eng.	Hope Valley
Peckham, Joseph Wallace, Elec. Eng.	Newport
Pezzullo, Rocco, Appl. Sci.	Providence
Records, Lawrence Austin, Agr.	Brockton, Mass.
Sherman, Isaac Thornton, Agr.	Newport
Smith, Waldo Albert, Agr.	Slocums
Stillman, Louis, Elec. Eng.	Brooklyn, N. Y.
Torgan, Nathan, Elec. Eng.	Providence
Tuzio, Arthur Joseph, Civil Eng.	Providence
Wales, Charles Howard, Mech. Eng.	Haverhill, Mass.
Walker, Frederick Earle, Mech. Eng.	Arlington

Whitaker, Harold Earl, Agr.	East Providence
Zerbarini, Angelo Joseph, Elec. Eng.	Westerly

Juniors

Adams, Grace Louise, Appl. Sci.	East Providence
Allen, Alvan Jason, Appl. Sci.	Providence
Backlin, Elof Gunner, Mech. Eng.	Orange, Mass.
Barr, Edward Harris, Elec. Eng.	Central Falls
Barton, Alfred Carr, Jr., Chem. Eng.	Warren
Benjamin, Alfred Gould, Elec. Eng.	East Greenwich
Bloxham, Harold Carlton, Chem. Eng.	Pawtucket
Byrnes, Joseph Bernard, Civil Eng.	Providence
Casey, Richard Grant, Mech. Eng.	Bridgewater, Mass.
Churchill, Irving Lester, Appl. Sci.	Kingston
Coker, Edwin Harold, Mech. Eng.	Providence
Connolly, Bernard Ambrose, Elec. Eng.	Brockton, Mass.
Corr, Elizabeth Eloise, Home Econ.	East Greenwich
Deery, Edwin Marshall, Agr.	Boston, Mass.
Earle, Marsden Perry, Appl. Sci.	Cranston
Ellis, Lester Joseph, Civil Eng.	Brockton, Mass.
Farnham, Raymond Ellsworth, Mech. Eng.	Providence
Fessenden, Helen Stewart, Home Econ.	Phenix
Ford, Willard Harding, Civil Eng.	Avon, Mass.
Gardner, Charles Sydney, Elec. Eng.	Brockton, Mass.
Gencarello, Angelo Mario, Mech. Eng.	Westerly
Gillis, Watson Clarence, Mech. Eng.	Providence
Greene, James Francis, Elec. Eng.	Woonsocket
Grossman, Gertrude, Educ.	Providence
Hammarlund, Arthur Norman, Appl. Sci.	East Providence
Hammett, Betty Westall, Home Econ.	Newport
Harrington, Gordon Leslie, Mech. Eng.	Woodville
Harrington, Helen Priscilla, Home Econ.	Greene
Hastings, Vinal Norberg, Chem. Eng.	Dorchester, Mass.
Haupt, Charlotte May, Home Econ.	Providence
Hawes, Russell Cheney, Agr.	Rumford
Hewitt, Etta Grace, Educ.	Providence
Hobbs, Howard Alfred, Appl. Sci.	East Providence
Holburn, Albert Edward, Appl. Sci.	Pawtucket
Holden, James Hamer, Appl. Sci.	Hartford, Conn.
Howland, John Calder, Chem. Eng.	Warren
Hoxsie, Ruby Arden, Home Econ.	Canonchet
Hughes, Bertha Isabelle, Home Econ.	Providence
Ingraham, George Ellery, Chem. Eng.	Bristol
Kinder, Joseph Church, Elec. Eng.	Bristol
Kinne, Norma Doris, Home Econ.	East Greenwich
LaPerche, Raymond Charles, Appl. Sci.	Providence
Levine, Sidney Joseph, Appl. Sci.	Providence

Levy, Samuel Joseph, Civ. Eng.	Providence
Lowry, Moses Christy, Appl. Sci.	Westerly
Lucey, Richard Alphonsus, Elec. Eng.	Brockton, Mass.
Martin, Harold Edward, Mech. Eng.	Providence
Moorhouse, George Sydney Redvers, Agr.	Westerly
Morehouse, Wade Allen, Mech. Eng.	Providence
Nordquist, Clarence Edward, Mech. Eng.	Providence
Pastorini, Louis Eugene, Civ. Eng.	Brockton, Mass.
Pope, Wallace Irving, Agr.	Providence
Potter, Grant Hamblett, Civil Eng.	Providence
Reed, John Hamilton, Agr.	Providence
Regester, Isabel Allen, Home Econ.	Providence
Scorpio, Angelo, Appl. Sci.	Providence
Sheehan, Irene May, Home Econ.	Providence
Simas, William Harvey, Appl. Sci.	East Providence
Smith, Lillian Gladys, Home Econ.	Providence
Smith, Martha Stedman, Home Econ.	Newport
Tabor, Helen Louise, Home Econ.	Jamestown
Tew, Mary Gladys, Home Econ.	Phenix
Titchener, Frederick Herman, Agr.	Providence
Turner, Everett Edgar, Civ. Eng.	Brockton, Mass.
Turner, Frederick Allen, Mech. Eng.	Riverside
Wade, Senior, Agr.	Woonsocket
Watson, Alma Linwood Barlow, Home Econ.	Providence
Wood, George William, Civil Eng.	Providence
Yarvots, Evarts, Elec. Eng.	New London, Conn.

Sophomores

Abbott, Ruth Madeline, Home Econ.	Providence
Adams, Arlo Gordon, Elec. Eng.	Central Falls
Adams, Harold Earl, Elec. Eng.	Providence
Anderson, Arvid Simmons, Mech. Eng.	Swampscott, Mass.
Anderson, Elmer Webster, Elec. Eng.	Pontiac
Andrews, Elvin Joseph, Civil Eng.	Newport
Arnold, Alzada, Home Econ.	Providence
Bailey, Abner Harris, Appl. Sci.	Bristol
Bowe, Ella Amanda Louise, Home Econ.	Providence
Butterworth, Walton Booth, Appl. Sci.	Arkwright
Cargill, Miriam Ayer, Appl. Sci.	Valley Falls
Chandler, George Alfred, Chem. Eng.	Providence
Clark, John Lathrop, Appl. Sci.	Providence
Coleman, Harry Vincent, Appl. Sci.	Pawtucket
Conefrey, Joseph Barlow, Elec. Eng.	Brockton, Mass.
Conefrey, Walter Thomas, Elec. Eng.	Brockton, Mass.
Cook, Marion Louise, Home Econ.	Glendale
Cressy, George Henry, Chem. Eng.	Providence
Datson, Doris Beatrice, Home Econ.	Westerly

Dickinson, George, Jr., Elec. Eng.	Providence
Dougherty, Francis Edward, Elec. Eng.	Providence
Dunn, Edward Patrick, Appl. Sci.	Newport
Edwards, Earl Sylvester, Chem. Eng.	Providence
Edwards, Theodor Bland, Mech. Eng.	Elmhurst, N. Y.
Eldredge, Raymond Atwood, Agr.	Chatham, Mass.
Ellsworth, Leonard Knight, Civil Eng.	Edgewood
Fager, Harold Orvar, Agr.	Rumford
Fisher, Lloyd Herbert, Elec. Eng.	Providence
Flynn, Frederick John, Civil Eng.	Woonsocket
Ganz, Arthur William, Elec. Eng.	Providence
Geary, Timothy Edward, Elec. Eng.	Westerly
Gee, Harold Frederic, Elec. Eng.	Ashton
Godschall, Milton Griffith, Mech. Eng.	Woonsocket
Hanley, James Richard, Appl. Sci.	Providence
Hawkins, William Raymond, Appl. Sci.	Providence
Holliday, William Merrick, Jr., Civil Eng.	Pawtucket
Howe, Vaslet Little, Mech. Eng.	Providence
Hudson, Raymond Arthur, Chem. Eng.	Woonsocket
Johnson, Eskil Conrad, Civil Eng.	Crompton
Kelley, Bertrand Warren, Jr., Appl. Sci.	East Providence
Kern, Harold Ferdinand, Chem. Eng.	Providence
Kimball, George Pryce, Appl. Sci.	Providence
Kinsey, Kenneth Lee, Elec. Eng.	Providence
Kulasewski, Bolus Alexander, Chem. Eng.	Crompton
LaBree, Lawrence Winthrop, Elec. Eng.	Providence
Lafleur, Leo Henry, Agr.	Warren
Leighton, Mary Belding, Home Econ.	Kingston
Lewis, Helen Frances, Home Econ.	Pawtucket
Little, Henry Raymond, Elec. Eng.	Providence
Little, Walter Bradford, Mech. Eng.	Providence
Manning, Atwell Mowry, Mech. Eng.	Riverside
Martin, Emily Madeline, Home Econ.	Newport
Matteson, Ray Carroll, Elec. Eng.	Anthony
McCarthy, John William, Agr.	Brockton, Mass.
McCaughey, Everett Vincent, Agr.	Lonsdale
McCauley, Joseph Francis, Elec. Eng.	Providence
McCoid, Florence Irene, Home Econ.	Providence
McDonough, Martin Clifford, Elec. Eng.	Warren
McKenzie, Frances Henrietta, Home Econ.	Providence
McLaughlin, Joseph Dominick, Mech. Eng.	Providence
Monsen, Alice Helene, Home Econ.	Newport
Mowry, Churchill Herbert, Elec. Eng.	Providence
Neill, Everett Cunningham, Mech. Eng.	Rumford
Nye, John Fremont, Elec. Eng.	Westerly
Parker, George Lee, Agr.	Oakland
Peckham, Raymond Maxwell, Agr.	Little Compton
Perry, Roy, Meeh. Eng.	North Attleboro, Mass.

Piacitelli, Joseph Albert, Mech. Eng.	Providence
Pike, Charles Amos, Elec. Eng.	East Greenwich
Reynolds, Frederick Conrad, Elec. Eng.	Providence
Rhodes, Lyndon Russell, Agr.	Providence
Ritzau, Walter John, Agr.	Providence
Rowell, Amos Farnsworth, Appl. Sci.	Groveland, Mass.
Salzillo, John, Mech. Eng.	Providence
Schultz, Alfred Oscar, Mech. Eng.	Newport
Shaw, James Gammon, Agr.	Providence
Shedd, Elizabeth Edson, Home Econ.	Providence
Siegel, Raymond Earl, Agr.	Arlington
Smith, Francis Rowland Farr, Elec. Eng.	Providence
Smith, Maurice Richmond, Mech. Eng.	Woonsocket
Smith, Ruth Hoffman, Home Econ.	Providence
Spencer, Lee Valley, Civil Eng.	Phenix
Sprague, Arthur Crawford, Civil Eng.	Block Island
Staf, Ella Hulda, Home Econ.	Providence
Swanson, Arthur Edward, Chem. Eng.	Providence
Tabor, Caroline Frances, Home Econ.	Jamestown
Totman, Frank Howard, Appl. Sci.	Providence
Vient, Louis Francis, Elec. Eng.	Providence
Walsh, Philip Leo, Mech. Eng.	Fall River, Mass.
Warden, Harold Colville, Mech. Eng.	Adamsville
Westcott, Alfred Johnson, Appl. Sci.	Pawtucket
Winter, Doris Parker, Home Econ.	Mansfield, Mass.
Winter, Martha Bruce, Home Econ.	Mansfield, Mass.
Witham, Frank Raymond, Agr.	Riverside
Wood, William Havens, Agr.	Slocums
Woodbury, Kenneth James, Agr.	Providence
Woodhouse, Edwin Clarence, Chem. Eng.	Providence
Woolley, John Edward, Mech. Eng.	Woonsocket

Freshmen

Alford, Frank Leo, Agr.	Everett, Mass.
Allan, Norman Dick, Eng.	Central Falls
Allen, Eleanor Austin, Home Econ.	Providence
Babcock, Jr., Harmon Seeley, Appl. Sci.	East Providence
Banks, Elizabeth, Home Econ.	East Greenwich
Barber, Hiram William, Eng.	Westerly
Barker, Raymond Tallman, Eng.	Portsmouth
Barnes, Dorothy Gertrude, Home Econ.	Providence
Batchelder, Charles Donald, Eng.	Providence
Bateman, Carl, Eng.	Manville
Baxter, Norman, Agr.	Centerville
Beck, Jr., William Mitchell Hawkins, Agr.	Everett, Mass.
Bemis, Harlan George, Eng.	Riverside
Bennett, William Leonard Harrison, Appl. Sci.	Providence
Bergman, Merrill Morton, Appl. Sci.	New London, Ct.

Bergstrom, Norman Alfred, Eng.	East Greenwich
Birkedal, Raymond Norman, Agr.	Pawtucket
Brady, Charles, Appl. Sci.	Auburn
Briggs, Frederick Alvin, Agr.	East Greenwich
Brown, James Brightman, Agr.	Providence
Brown, Waterman Farnum, Agr.	Lonsdale
Brown, William Horace, Agr.	Newport
Buxton, Flossie Eliza, Home Econ.	Pascoag
Chace, Earl Bevan, Appl. Sci.	East Providence
Chandler, Harry Clayton, Appl. Sci.	Providence
Chappell, Matthew, Eng.	Westerly
Christensen, Andrew Thomas Joseph, Eng.	Newport
Clarke, Fred Norcross, Jr., Agr.	Providence
Clarke, Luke, Eng.	Aretic
Connor, William Joseph, Agr.	Providence
Coyne, Roger Timothy, Eng.	Warren
Crimmins, Jr. John Edward, Eng.	Brockton, Mass.
Cummings, Dorothy, Home Econ.	Providence
Dowling, Anna Clare, Home Econ.	Providence
Dowling, Howard Martin, Eng.	Providence
Drew, Helen Charlotte, Appl. Sci.	Phenix
Emidy, Walter Raphael, Appl. Sci.	Woonsocket
Ernst, Jr., Ehler John, Appl. Sci.	Providence
Evans, Julia, Home Econ.	Arnolds Mills
Ewen, Robert Gaskill, Eng.	Woonsocket
Fagan, George Edward, Eng.	Pascoag
Fanning, Joseph Thomas, Eng.	Valley Falls
Fish, Warren Beebe, Eng.	Mystic, Conn.
Fort, Esther Evelyn, Home Econ.	North Smithfield
Fort, William Sutherland, Eng.	Woonsocket
French, Ralph Laurence, Eng.	Plainville, Mass.
French, Winthrop Weare, Appl. Sci.	Sandwich, Mass.
Gallup, Benjamin Tyler, Eng.	Centerville
Gledhill, Charles Leonard, Eng.	Conimicut
Greene, Jr., Walter Copping, Eng.	Providence
Halloran, John Edmund, Eng.	Brockton, Mass.
Harribine, Grace Elizabeth, Home Econ.	Providence
Hartwell, Margaret Arleen, Home Econ.	Littleton, Mass.
Haslam, George Stevenson, Eng.	Palmerton, Pa.
Hathaway, Leonard Briggs, Eng.	Woonsocket
Heroux, Irving Edward, Eng.	Manville
Hill, Alfred Milton, Eng.	Bristol
Hill, Ralph Pringle, Eng.	Newport
Homan, Luther Clarke, Eng.	Providence
Horton, Clarence Ambrose, Eng.	Providence
Howard, Roy William, Eng.	Providence
Johnson, Clarence Edward, Eng.	East Greenwich
Kenney, Jr., Charles Daboll, Eng.	Auburn

Kenny, Joseph Ignatius, Eng.	Providence
Kevorkian, Vahan, Eng.	Providence
Kirby, Thomas Joseph, Eng.	Pascoag
Knott, Howard Evans, Eng.	Providence
Knowles, Dorothy Clarke, Home Econ.	West Kingston
Kresge, Wharton Webster, Eng.	Palmerton, Pa.
Kruger, William Edward, Eng.	Montello, Mass.
Lamprey, Loomis Farrar, Eng.	Cranston
Laycock, Thomas Alfred, Eng.	Providence
Leathers, Ruth Althea, Home Econ.	Oak Lawn
Ledwidge, Jr., Augustine Thomas, Eng.	Westerly
Leibovitz, Edward Louis, Appl. Sci.	Westerly
Macintosh, Henry Havelock, Eng.	Providence
Martin, Francis Raymond, Eng.	Brockton, Mass.
Matheson, George Alexander, Eng.	Bristol
McAlevy, Everett Bernard, Appl. Sci.	Pawtucket
McCarthy, George Logan, Eng.	Lonsdale
McGill, Jr., Thomas Francis, Eng.	Woonsocket
McGrath, Lelia Elizabeth, Home Econ.	Valley Falls
McKanna, Joseph Ross, Appl. Sci.	Crompton
Mellion, Cecelia, Home Econ.	Providence
Michie, Harry Richard, Appl. Sci.	Providence
Morrow, George Randolph, Eng.	Sandwich, Mass.
Mowry, Stanley Howard, Agr.	Woonsocket
Mowry, Wilmer Morton, Eng.	Providence
Nordquist, Carl Arthur, Eng.	Providence
Norman, Aaron, Eng.	Providence
Norman, Morris, Eng.	Woonsocket
Palmer, Frederick Nelson, Eng.	Bristol
Parker, Shelton Clarke, Eng.	Valley Falls
Pearson, Raymond Reynolds, Agr.	Lynnfield Center, Mass.
Peckham, Ella Leona Remembrance, Home Econ.	Newport
Peckham, Gladys Jasimine Louise, Home Econ.	Newport
Perry, Pauline Francis, Home Econ.	Providence
Phinney, Kenneth Richmond, Eng.	Pawtucket
Post, Ernest Franklin, Eng.	Mystic, Conn.
Rabnowitz, Benjamin Julius, Eng.	Brockton, Mass.
Reid, William Mitchell, Eng.	Mapleville
Ricketts, Joseph Clifton, Eng.	Lakewood
Rocheleau, Homer Roland, Eng.	Woonsocket
Roddy, Vincent James, Eng.	Providence
Romer, Irving Carl, Eng.	Providence
Rondeau, Orience Joseph, Agr.	Pawtucket
Rust, Howard Stanley, Eng.	Providence
Salisbury, Richard Norman, Eng.	Providence
Schaller, Arthur Joseph, Eng.	Providence
Schattle, William Osborne, Eng.	Providence
Seymour, Walter Edmund, Eng.	Wakefield

Shaw, Ralph Sprague, Eng.	Lonsdale
Shaw, Robert Wheaton, Eng.	Lonsdale
Shea, William Riley, Eng.	North Attleboro, Mass.
Simmons, Maitland Pierce, Agr.	Providence
Sisson, Alice Teele, Home Econ.	Little Compton
Smith, Thomas William, Eng.	Three Rivers, Mass.
Smith, William Frank, Appl. Sci.	Cranston
Spooner, Jr., John Horswell, Appl. Sci.	Newport
Steere, Milton Phillips, Agr.	Chepachet
Stuart, George Ambrose, Eng.	Bristol
Swedberg, Gustave Halmar, Eng.	Seekonk, Mass.
Tower, John Vogler, Eng.	Meshanticut
Turner, Wendell Roscoe, Agr.	Riverside
Tweedell, James Collier, Eng.	Providence
Whaley, Katie Bowen, Home Econ.	Wakefield
Wheeler, Stephen Duncan, Agr.	Pawtucket
White, Nelson Church, Eng.	Cranston
Wight, Jr., John Bayard, Eng.	Hartford, Conn.
Wilcox, Mary Caroline, Home Econ.	Westerly
Wood, Abbie Louise, Home Econ.	Pawtucket
Wood, Robert Palmer, Appl. Sci.	Riverpoint
Woodward, Burton Staples, Eng.	Woonsocket
Worthington, Oliver Jackson, Agr.	Providence

Irregulars

Beebe, Edward Starkweather, Elec. Eng.	New York, N. Y.
Burgess, Frances Bernice, Home Econ.	Kingston
Fletcher, William Ingersoll, Agr.	Lakewood
Guillemette, Delphis Victor, Mech: Eng.	Pawtucket
Hawes, Howard Haldane, Agr.	Riverside
Keegan, Annie Isabel, Home Econ.	Kingston
Littlefield, Richard Webster, Appl. Sci.	Natick
Merrill, Miriam, Home Econ.	Kingston
Swahn, John Axel, Appl. Sci.	Woonsocket
Tribolet, Theodore Ralph, Appl. Sci.	Kingston
Mendleson, Samuel, Appl. Sci.	Albany, N. Y.

Two-Year Agriculture

Breingan, Peter.	Newport
Cook, Freeman Waldo.	Georgiaville
Latham, Herbert Bradford.	Rumford
Potter, Alfonso Frank.	Pawtucket
Rooney, Charles Richard.	Woonsocket
Steere, Wendell Winsor.	Providence

Summary

Graduates.....	4
Seniors.....	34
Juniors.....	69
Sophomores.....	98
Freshmen.....	134
Irregulars.....	11
	—
Total.....	350
Two-Year.....	6
	—
Total.....	356

Graduates

BACHELOR OF SCIENCE

1894

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD.....Agr. M. Agr. R. I. State College, 1916. Kingston.		Professor of Agronomy and Dean of Agricultural Dept., R. I. S. C.
AMMONDS, GEORGE CLARENCE.....Mech. 54 Eliot St., Boston, Mass.		Railroad Postal Clerk, on N. Y., N. H. & H. R. R.
ARNOLD, CHAPIN TRAFFORD.....Agr. Box 57, Providence.		Electrical Contractor, Office 26 Custom House St., Providence.
BURLINGAME, GEO. WASHINGTON....Agr. R. F. D. No. 2, Box 56, North Scituate.		Farmer and Teacher.
CLARK, HELEN MAY (MRS. WM. F. B. LEAVITT), B. L., Smith Col- lege, 1899. Essex Fells, New Jersey.		At home.
KNOWLES, JOHN FRANKLIN.....Mech. Narragansett Pier.		With The Bristow Bros. & Knowles Corporation.
*MADISON, WARREN BROWN.....Agr.		
MATHEWSON, ERNEST HOXSIE.....Mech. Ph. B., Brown University, 1896. Reidsville, North Carolina.		Crop Technologist in Tobacco, U. S. Department of Agricul- ture.
PECKHAM, REUBEN WALLACE.....Agr.		Y. M. C. A. Secretary, 41 Rue de Provence, Paris, France.
RATHBUN, WILLIAM SHERMAN.....Agr. Box 90, R. F. D. No. 2, Holyoke, Mass.		City Editor, Holyoke Evening Telegram.
RODMAN, GEORGE ALBERT.....Mech. New Haven, Conn.		General Supervisor, Bridges and Buildings, Union Station, N. Y., N. H. & H. R. R. Co.
SARGENT, CHARLES LAWRENCE.....Agr. Ph. D., University of Pennsylvania, 1900. 54 Shepard Ave., Newark, N. J.		Technical Director, Murphy Var- nish Co.
SLOCUM, SAMUEL WATSON.....Agr. 60 Summer St., Westerly.		Instructor in Woodwork, West- erly Industrial School.
SPEARS, JOHN BARDEN.....Agr. Foster Centre.		Rural Letter Carrier.

It is earnestly desired that graduates inform the college office of any permanent change of address.
* Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SWEET, STEPHEN ADELBERT.....	Agr.	Farmer.
Slocum.		
TUCKER, GEORGE MASON.....	Agr.	Dairy Department, Maryland
Ph. D. Göttingen, 1899.		State College.
College Park, Md.		
WILBER, ROBERT ARTHUR.....	Mech.	Carriage-maker and blacksmith.
East Greenwich.		

1895

*ALBRO LESTER FRANKLIN.....	Agr.	
BURDICK, HOWLAND.....	Agr.	Assistant Professor of Dairying,
Kingston.		R. I. S. C.
CLARKE, CHARLES SHERMAN.....	Mech.	Marine Engineer.
22 Wood St., Bristol.		
ELDRED, MABEL DEWITT.....		Assistant Professor of Art, R.I.S.C.
Kingston.		
HAMMOND, JOHN EDWARD.....	Agr.	Farmer.
Jamestown.		
OATLEY, LINCOLN NATHAN.....	Mech.	Contractor and builder; Coal
Wakefield.		Dealer.
SCOTT, ARTHUR CURTIS.....	Mech.	Consulting Engineer, with Dallas
Ph. D., Univ. of Wisconsin, 1902.		News Organization.
4114 Cedar Springs Ave., Dallas,		
Texas.		
TEFFT, JESSE COTTRELL.....	Mech.	Storekeeper.
Jamestown.		
WINSOR, BYRON EDGAR.....	Mech.	R. F. D., Mail Carrier.
Coventry.		

1896

BROWN, MAY (MRS. CHARLES A. WHITE).	At home.
Narragansett Pier.	
GREENMAN, ADELAIDE MARIA	
(MRS. R. WALLACE PECKHAM).....	At home.
Graduate, School of Expression, 1901.	
France.	
KENYON, ALBERT LEWIS.....	Mech.
Printer, with U. S. Finishing Co.	
216 Rochambeau Ave., Providence.	
MOORE, NATHAN LEWIS CASS.....	Agr.
Fruit-grower.	
Harrington Park, New Jersey.	
TABOR, EDGAR FRANCIS.....	Mech.
Salesman, Ford Motor Co.	
39 Everett St., Southbridge, Mass.	
*WILLIAMS, JAMES EMERSON.....	Agr.

1897

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS.....Sci. Shannock.		With Underwood Typewriter Co., 74 Franklin St., Boston, Mass.
CASE, HERBERT EDWARDS BROWN..Mech. Ph. B., Brown University, 1900. Graduate, Hartford Theological Seminary, 1904. 14 Beacon St., Boston, Mass.		Asst. Secretary, American Board of Commissioners for Foreign Mis- sions.
GRINNELL, ARCHIE FRANKLIN.....Mech. 104 Potter St., Auburn.		Chief Draftsman, A. H. Whatley Co.
HANSON, GERTRUDE MAIE. (MRS. FREDERICK D. KNAPP).....Sci. Stonington, Conn.		At home.
HOXSIE, BESSIE BAILEY (MRS. E. F. RUECKERT).....Sci. 98 Melrose St., Providence.		At home.
KENYON, ALBERT PRENTICE.....Mech. 23 Courtland St., Westerly.		Clerk, C. B. Cottrell & Sons Co.
KENYON, CHARLES FRANKLIN.....Mech. Shannock.		Engineer.
LARKIN, JESSIE LOUISE.....Sci. 98 Beach St., Westerly.		Genealogist.
*MARSLAND, LOUIS HERBERT.....Mech.		
TEFFT, ELIZA ALICE.....Sci. East Greenwich.		Teacher.
THOMAS, IRVING.....Mech. Lafayette.		Farmer and Mill Operative.

1898

ARNOLD, SARAH ESTELLE (MRS. R. O. BROOKS).....Sci. 975 East 18th St., Brooklyn, N. Y.		At home.
BARBER, GEORGE WASHINGTON.....Agr. Glendora, Cal.		Rancher.
CARGILL, EDNA MARIA (MRS. LESTER H. BROWN).....Sci. R. F. D. No. 2, Box 96, Valley Falls.		At home.
CASE, JOHN PETER.....Agr. 251 Monadnock Bldg., San Francisco, Cal.		Manager Western Office, Brown Hoisting Machinery Company.
CLARKE, WILLIAM CASE.....Sci. 17 Dexterdale Road, Providence.		General Manager, Narragansett Pier Elec. Light and Power Co.
CONGDON, HENRY AUGUSTUS.....Mech. Kingston.		Farmer.
FLAGG, MARTHA REBECCA.....Sci. Abbott Run.		At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HARLEY, WILLIAM FERGUSON..... 23 Summit Ave., Providence.	Agr.	Buyer, with Callender, McAuslan & Troup Co., Providence.
TURNER, HARRIETTE FLORENCE (MRS. GEO. M. TUCKER)..... Graduate, Drexel Institute, 1900. Maryland.	Sci.	At home.
WILSON, GRACE ELLEN (MRS. W. F. HARLEY)..... 23 Summit Ave., Providence.	Sci.	At home.

1899

BOSWORTH, ALFRED WILLSON..... A. M., Harvard University, 1913. 36 Avalon Road, West Roxbury, Mass.	Sci.	Director of the Research Laborato- ries, Boston Floating Hospital; Research Fellow, Harvard Med- ical School.
BROOKS, RALPH ORDWAY..... 975 East 18th St., Brooklyn, N. Y.	Sci.	Consulting Chemist, Bacteriolo- gist, Microscopist, Food-Inspec- tion Expert, 191 Franklin St., New York City.
GEORGE, LILLIAN MABELLE..... A. B., Univ. Illinois, 1904. Graduate, N. Y. State Library School, 1910. 135 N. 26th St., Corvallis, Ore.	Sci.	In charge of Continuations, Oregon Agricultural College Library.
HARVEY, MILDRED WAYNE (MRS. WM. H. BLISS)..... 390 Wadsworth Ave., New York City.	Sci.	At home.
KENYON, BLYDON ELLERY..... Dover, New Jersey.	Agr.	Asst. Supt. of Construction, Stone & Webster Eng. Corporation.
KNOWLES, CARROLL..... 77 Chiswick Road, Edgewood.	Mech.	Chief Tool Designer, Brown & Sharpe Mfg. Co.
KNOWLES, HARRY..... Ph. B., Brown University, 1906. 113 Ft. Greene Place, Brooklyn, N. Y.	Sci.	Advertising, Atlas Portland Cement Co.
LADD, MERRILL AUGUSTUS..... Jacksonville, Fla.	Mech.	Proprietor, Stinson Electric Co., 108 West Bay St.
MORRISON, CLIFFORD BREWSTER..... Minneapolis, Minn.	Sci.	Chemist, National Baking Insti- tute.
OWEN, WILLIAM FRAZIER..... Schenectady, N. Y.	Mech.	Engineering Department, General Electric Co.
PAYNE, EBENEZER..... M. D., Univ. Michigan, 1904. Glendora, Cal.	Sci.	Physician and Surgeon.
PHILLIPS, WALTER CLARKE..... Ph. B., Brown University, 1902. A. M., Brown University, 1903. Providence.	Mech.	Instructor in English, Brown Uni- versity.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
REYNOLDS, ROBERT SPINK Room 314, Gen. Office Bldg., New Haven, Conn.	Mech.	Assistant Engineer, Bridge Dept., N. Y., N. H. & H. R. R. Co.
RICE, MINNIE ELIZABETH (MRS. ROBERT J. SHERMAN) Exeter Hill.	Sci.	At home.
SHERMAN, ABBIE GERTRUDE (MRS. BENJAMIN BARTON) 56 Pavilion Ave., Providence.	Sci.	At home.
*SHERMAN, GEORGE ALBERT	Mech.	
THOMPSON, SALLY RODMAN (MRS. LEWIS BALCH, JR.) Wakefield.	Sci.	At home.

1900

BRIGHTMAN, HENRY MAXSON 200 Broadway, New York.	Mech.	President, General Manager Ver- sailles Sanitary Fibre Mills, United Chemical Works, Hy- giene Fibre Co.
CROSS, CHARLES CLARK 316 Schantz Ave., Troy, Ohio.	Mech.	President and General Manager, The Troy Body Co., Troy, Ohio.
ELDRED, JOHN RALEIGH Kingston.	Mech.	Instructor in Mechanical Engineer- ing, R. I. S. C.
FISON, GERTRUDE SARAH (MRS. JOHN W. ROOT) 26 Main St. Park, Malden 48, Mass.	Sci.	At home.
FRY, JOHN JOSEPH Greenwich, Conn.	Sci.	Supervising Principal, Byram School and Hamilton Ave. School.
GODDARD, EDITH (MRS. LAWRENCE B. REED) 20 North St., Plymouth, Mass.	Sci.	At home.
KENYON, AMOS LANGWORTHY Wood River Junction.	Agr.	Dairyman.
MUNRO, ARTHUR EARLE Ph. B., Brown University, 1902. 41 George St., Providence.	Sci.	Attorney-at-law, 49 Westminster St.
SOULE, RALPH NELSON Racine, Wisconsin.	Sci.	Mgr., Gen. Service Dept., Mitchell Motor Co., 842 Main St., Racine.
STEERE, ANTHONY ENOCH Room 54, Triangle Bldg., Rochester, N. Y.	Mech.	Resident Civil Engineer, New York State Canals.
STILLMAN, LENORA ESTELLE 1046 Greene Ave., Brooklyn, N. Y.	Sci.	Teacher.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
TUCKER, BERTHA DOUGLASS.....	Sci.	Teacher of Machine Operating
109 Queensbury St., Boston, Mass.		Dressmaking, Trade School for Girls.
WHEELER, CHARLES NOYES.....	Sci.	Clerk, Wm. H. Haskell Manufac-
21 Cedar St., Pawtucket.		turing Co.
WILSON, JOSEPH ROBERT.....	Mech.	Surveyor.
184 Grace St., Auburn.		

1901

BRAYTON, CHARLES ANDREW.....	Agr.	Farmer.
Hope, R. F. D.		
BRIGGS, NELLIE ALBERTINE.....	Sci.	Stenographer, R. I. Hospital Trust
Providence.		Co.
BURGESS, CHARLES STUART.....	Mech.	Draughtsman, Brown & Sharpe
264 Sayles St., Providence.		Mfg. Co.
CLARNER, LOUIS GEORGE KARL, JR....	Sci.	Insurance Engineer, N. H. Bureau
19 Pearl St., Concord, N. H.		of Underwriters.
DAWLEY, EDNA ETHEL		
(MRS. GEORGE W. WHITFORD).....	Sci.	At home.
Wakefield, R. F. D.		
DENICO, ARTHUR ALBERTUS.....	Sci.	Telephone Engineer, with American
Ph. B., Brown University, 1904.		Telephone and Telegraph Co.
195 Broadway, New York City.		
*JAMES, RUTH HORTENSE		
(MRS. HERBERT E. ROUSE).....	Sci.	
SHERMAN, ANNA BROWN		
(MRS. JOSEPH R. WILSON).....	Sci.	At home.
184 Grace St., Auburn.		
SHERMAN, ELIZABETH AGNES.....	Sci.	Secretary to N. L. Amester, 209
136 Sutherland Road, Brookline, Mass.		Washington St., Boston.
SMITH, HOWARD DEXTER.....	Sci.	Instructor in Chemistry, Evening
A. M., Brown University, 1904.		School of Lowell Textile School;
Ph. D., Tufts College, 1906.		Chief Chemist, Carleton & Hovey
669 Westford St., Lowell, Mass.		Co.
STEERE, ROWENA HOXIE.....	Sci.	At home.
102 Sassafra St., Providence.		
*WILBY, JOHN.....	Sci.	

1902

CLARKE, LATHAM.....	Chem.	Director, Instituto de Quimica
A. M., Brown University, 1903.		Industrial.
Ph. D., Harvard University, 1905.		
Montevideo, Uruguay.		
FERRY, OLIVER NEEDHAM.....	Mech.	Superintendent, Waterbury Tool
111 Coniston Ave., Waterbury, Conn.		Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
MAXSON, RALPH NELSON..... Ph. D., Yale University, 1905. 366 Transylvania Park, Lexington, Ky.	Chem.	Professor Inorganic Chemistry, State University.
PITKIN, ROBERT WILLIAM..... Rockville, Conn., R. F. D. No. 1.	Mech.	Farmer.

1903

BARBER, KATE GRACE (MRS. A. L. WINTON)..... Ph. D., Yale University, 1906. Wilton, Conn.	Gen. Sci.	At home.
CONANT, WALTER AIKEN..... Temple, N. H.	Agr.	Dairying, The Conant and Clem- ent Farms, Hillsboro County.
GODDARD, WARREN, JR..... Graduate, New Church Theological School, 1907. 229 S. Walnut St., Urbana, Ohio.	Mech.	Instructor in Physics, Chemistry and Philosophy of Science, Ur- bana Univ. School.
KEEFER, EDITH CECILIA..... 323 Hamilton Ave., Palo Alto, Calif.	Biol.	Teacher, School for Girls.
KENT, RAYMOND WARREN..... A. M., Harvard University, 1904. 1237 Ridge Road, Canton, Ohio.	Chem.	Chemist, The Knight Tire & Rub- ber Co.
TEFFT, ERNEST ALLEN..... 87 Larch St., Providence.	Elec. Eng.	Electrical Contractor, 87 West- minster St.

1904

BALLOU, WILLARD ALGER..... B. S., Columbia University, 1913. M. A., Columbia University, 1915. 335 Lafayette Ave., Brooklyn, N. Y.	Biol.	Instructor in Mathematics, Pratt Institute.
QUINN, MARY LOUISE..... 213 Purchase St., Fall River, Mass.	Biol.	Teacher of Science, B. M. C. Durfee High School.
RODMAN, WALTER SHELDON.... M. S., R. I. S. C., 1907. M. S., Mass. Inst. Tech., 1909. Box 222, University, Va.	Elec. Eng.	Professor of Electrical Engineer- ing, University of Virginia.

1905

CHAMPLIN, SARAH ELIZABETH (MRS. HAROLD L. FRIEND)..... 306 Smith St., Edgewood.	Gen. Sci.	At home.
DOW, VICTOR WELLS..... 14 Sewall Woods Road, Melrose Highlands, Mass.	High. Eng.	Special Sales and Advertising Rep- resentative, John Warren Watson Co., of Philadelphia.
GILMAN, JEAN..... Hampton, Va.	High. Eng.	Assistant to Director of Trade School, Hampton Institute.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
*HARRALL, NELLIE ARMSTRONG (MRS. B. H. ARNOLD).....	Gen. Sci.	
Graduate, Sargent School of Physical Education, 1909.		
1906		
ARNOLD, BENJAMIN HOWARD....	Elec. Eng.	Asst. Chief Engineer, Fairbanks, Morse Co.
516 College St., Beloit, Wisconsin.		
*BERRY, WALLACE NOYES.....	Elec. Eng.	
ELKINS, MARION GRAHAM.....	Gen. Sci.	Teacher.
Ph. D., Yale University, 1912.		
10 Moody St., Amesbury, Mass.		
HARDING, LEE LAPLACE.....	High. Eng.	Division Mgr., Tractor Dept., New Britain Machine Co.
52 Robbins Ave., New Britain, Conn.		
KEYES, FREDERICK GEORGE.....	Chem.	Director Research Laboratory, Physics and Chemistry, Mass. Inst. of Technology.
Sc. M., Brown University, 1907.		
Ph. D., Brown University, 1909.		
12 Mellen St., Cambridge, Mass.		
NICHOLS, HOWARD MARTIN....	Elec. Eng.	Mgr. Conveying and C. I. Fan Dept., B. F. Sturtevant Co.
14 Clifford St., Readville, Mass.		
SISSON, CORA EDNA		
(MRS. BENJAMIN D. BUSH)....	Gen. Sci.	At home.
M. S., Brown University, 1910.		
Lakewood, N. J.		
WILKINSON, ALBERT EDMUND.....	Agr.	County Agricultural Agent.
M. Agr., R. I. State College, 1916.		
May's Landing, N. J.		

1907

BARBER, ARTHUR HOUGHTON..	Mech. Eng.	Inspector for Associated Factory Mutual Fire Insurance Cos., Boston, Mass.
East Greenwich.		
COGGINS, CALVIN LESTER.....	Elec. Eng.	Assistant Professor of Physics and Elec. Eng., R. I. S. C.
Kingston.		
FERRY, JAY RUSSELL.....	High. Eng.	
Warren.		
KELLOGG, DAVID RAYMOND.....	Chem.	Captain, Ordnance R. C., Inspec- tion Division.
Ph. D., Ohio State University, 1912.		
Albemarle Bldg., 24th and Broad- way, New York.		
KENDRICK, WINFIELD SMITH....	Elec. Eng.	Gen. Sales Mgr., Victor X-Ray Corporation.
236 So. Robey St., Chicago, Ill.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LAMOND, JOHN KENYON..... M. A., Yale University, 1908. Ph. D., Yale University, 1910. 3 Pennsylvania Ave., Philadelphia, Pa. Brookline, Upper Darby, Branch P. O.	Elec. Eng.	Engineering Dept., Bell Telephone Co. of Pa.
LEWIS, HARRY REYNOLDS..... M. Agr. R. I. S. C., 1916. Davisville.	Agr.	Farmer and Writer.
*MACOMBER, MINER SANFORD.....	Chem.	
TUCKER, ETHEL ALDRICH (MRS. LITTLETON C. HAYDEN)	Gen. Sci.	At home.
28 Sadler Ave., Pittsfield, Mass.		

1908

DREW, JOSEPH DRAKE..... Fairfield, Alabama.	Chem.	Coke Inspector, Tenn. Coal, Iron R. R. Co.
FIELD, CLESSON HERBERT..... C. E., Lehigh University, 1909. 272 Washington Highway, Snyder, N. Y.	Civ. Eng.	Contract'g Engineer, Buffalo Struc- tural Steel Co., Buffalo, N. Y.
FISKE, HERBERT ANDREW..... 1800 Acushnet Ave., New Bedford, Mass.	Elec. Eng.	Proprietor, H. A. Fiske Garage.
GARDINER, ROBERT FRANKLIN..... M. S., George Washington University, 1914. Apt. 202, 1511-22nd St., N. W., Wash- ington, D. C.	Chem.	Research Chemist, Bureau of Soils, U. S. Dept. of Agriculture.
GORY, EDWARD ALLEN..... 5 City Hall Square, Lynn, Mass.	Elec. Eng.	Electric Engineer, General Electric Co., Lynn, Mass.
KENYON, SUSAN ELNORA (MRS. FRED K. CRANDALL)..... Kingston.	Biol.	At home.
MITCHELL, CLOVIS WILLIAM..... Greenville.	Civ. Eng.	Superintendent of Schools.
ROSE, ORPHA LILLIE (MRS. HENRY A. CONGDON) ... Kingston.	Gen. Sci.	Teacher.
SHELDON, GEORGE WARE..... Wakefield.	Elec. Eng.	With Westinghouse Electric Co.
SHERMAN, MARY ALBRO (MRS. FRED M. MANLY)..... 80 Taunton Ave., East Providence.	Agr.	Science Teacher, Magnolia High School, Matewan, West Va.
SMITH, JOHN LEBROC..... A. M., Brown University, 1915. 19 Walker Ave., Saylesville.	Elec. Eng.	Superintendent of Schools in Town of Lincoln.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WHIPPLE, LUCIUS ALBERT..... 1142 Smith St., Providence.	Civ. Eng.	Superintendent, State Home and School.

1909

CARGILL, RHOBIE LUCELIA..... 256 President Ave., Providence.	Appl. Sci.	Teacher of Science, Technical High School.
CRAIG, JAMES MCINTYRE..... Casilla Correo 23, Rosario de Sta. Fe, Argentine.	Agr.	Gardener and Merchant.
CRANDALL, FRED KENYON..... Kingston.	Agr.	Assistant, Agronomy Dept., Experiment Station, R. I. S. C.
FRENCH, HENRY FRANK..... 57 Mall St., West Lynn, Mass.	Elec. Eng.	Turbo-Generator Engineer, General Electric Co.
HOWE, ALBERT MENDEL..... 1 Rockland St., Brockton, Mass.	Elec. Eng.	Inspector, Bay State St. Ry. Co.
KNOWLES, WALTER..... Kingston.	Civ. Eng.	With N. Y., N. H. & H. R. R. Co., Construction Department.
LEE, ALFRED ROGERS..... Decatur Heights, Landover, Md.	Agr.	Animal Husbandman, in Poultry Investigation, Bureau of Animal Industry, U. S. Dept. of Agriculture.
MORAN, WALTER JOHN..... R. F. D., Uncasville, Conn.	Civ. Eng.	Farmer.
MOYER, LOUIS EARL..... Seneca Falls, N. Y.	Civ. Eng.	Civil Engineer, State of New York, Commission of Highways.
ROCKWELL, RUBY BELL (MRS. JOHN O'LOUGHLIN)..... Medford St., R. F. D., No. 1, Birghampton, N. Y.	Chem.	At home.
SMITH, ELMER FRANCIS..... 331 Walnut St., Roselle Park, N. J.	Elec. Eng.	Supt. of Public Schools.
TISDALE, HARRY ROBERT..... Mass. Inst. Technology, 1911. 58 Georgiana St., New London, Conn.	Chem.	Supt., Dye House, Brainerd & Armstrong, Silk M'f'rs.
TUCKER, ELLEN CAPRON..... Kingston.	Gen. Sci.	Primary Teacher, Peacedale.

1910

BURGESS, PAUL STEERE..... M. S., University of Illinois, 1911. Ph. D., Univ. of California, 1920. Kingston.	Chem. Eng.	Professor of Chemistry; Chemist, Experiment Station, R. I. S. C.
CARPENTER, RANDOLPH HAYWOOD..... 632 East 26th St., Brooklyn, N. Y.	El. Eng.	Sales Engineer, Nash Engineering Co., 21 E. 40th St., New York City.
CUMMINGS, ROBT. WINTHROP..... 400 Federal St., Greenfield, Mass.	Mech. Eng.	Supervisor of Production Control, Greenfield Tap & Die Corporation.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GOODALE, RALPH WALDO M. S. R. I. S. C. 1920. 55 Gilbert Ave., New Haven, Conn.	Civ. Eng.	Chief Draftsman, Con. Dept. N. Y., N. H. & H. R. R. Co.
HARDY, JOHN IRA Ph. D., Univ. of Missouri, 1917. 50 Glenwood Road, Albany, N. Y.	Gen. Sci.	Textile Chemist, Albany Felt Com- pany.
HEATH, BERTHA MAY M. S. R. I. S. C. 1920. Foxboro, Mass.	Agr.	Laboratory Assistant, State Hos- pital.
KENYON, AMOS HARRIS 131 Abbott St., Providence.	Elec. Eng.	Traffic Chief, American Tel. & Tel. Co.
LAMOND, HELEN SCOTT (MRS. R. H. CARPENTER) 632 East 26th St., Brooklyn, N. Y.	Gen. Sci.	At home.
MOUNCE, LEROY LEIDMAN South Woodstock, Vt.	Agr.	Manager, Upwey Farms.
PEABODY, GEORGE ABBOTT Box 553, Schenectady, N. Y.	Elec. Eng.	Assistant to Superintendent, Section "C," General Electric Co.
SHERMAN, JOHN LELAND R. F. D. 147, Mansfield, Mass.	Agr...	Farmer.
SMITH, HIRAM JAMESON Fort Worth, Texas.	Civ. Eng.	With John B. Hawley, Consulting Engineer.
WAGNER, ALBERT FREDERIC M. S., Purdue Univ., 1913. Box 516, Annapolis, Md.	Elec. Eng.	Asst. Professor of Elec. Engineering and Physics, U. S. Naval Acad- emy.
WHEELER, RICHARD HOWES 125 East 46th St., New York City.	Elec. Eng.	Elec. Engineer, with Dwight P. Robinson Co.
WORRALL, DAVID ELBRIDGE M. A., Harvard Univ., 1911. Ph. D., Harvard Univ., 1919. 7 Edison Ave., Medford Hillside, Mass.	Chem.	Asso. Professor of Organic Chem- istry, Tufts College.

1911

ANDREWS, CARMEN NICHOLS Slocums.	Appl. Sci.	Teacher, A. P. Hoyt School, East Providence.
ANGILLY, CHARLES ENOCH, JR. 610 Fir Ave., Inglewood, Cal.	Civ. Eng.	Draftsman, Dept. of Public Ser- vice, Bureau of Water Works. Los Angeles, Cal.
EASTERBROOKS, HAROLD ARNOLD 280 Benefit St., Providence.	Biol.	Student, Tufts Medical School, Boston.
EASTERBROOKS, LOUIS CHURCH 280 Benefit St., Providence.	Agr.	In business.
GILCREST, CLYDE RONALD 618 Centre St., Wilkesburg, Pa.	Elec. Eng.	Commercial Engineer, Supply Dept., Westinghouse Electric and Manufacturing Co.
HARRIS BURTON KENNETH R. F. D., Saylesville.	Chem. Eng.	Lime Manufacturer.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HEALY, PATRICK JOSEPH..... 400 Madison Ave., New York.	Agr.	Gardener, care Ralph Armstrong.
KENT, ROBERT WILLARD..... 29 Morseland Ave., Newton Centre, Mass.	Mech. Eng.	Construction Engineer, Division Chief, with Cooley & Marvin Co., Boston, Mass.
MINOR, ARTHUR JACOB..... C. E., R. I. S. C., 1915. 31 Milk St., Boston, Mass.	Civ. Eng.	Inspector, Factory Mutual Fire Insurance Co.
NEAL, WILLIAM THOMAS..... Walton, N. Y.	Agr.	Proprietor of Tripp Floral Co.
ROBINSON, BENJ. ROWLAND... 32 Clark St., Worcester, Mass.	Mech. Eng.	Chief Draftsman, Sanford-Riley Stoker Co.
RUPRECHT, RUDOLF WILLIAM... M. S., Mass. Agr. College, 1914. Ph. D., Mass. Agr. College, 1916. Delmar-Morris Apartments, Germantown, Pa.	Appl. Sci.	Chief Chemist and Superintendent of Fertilizer Factory, F. W. Jun- nell & Co.
SAFFORD, HOWARD ALBERT..... National Soldiers' Home, Maine.	Agr.	Chief Gardener.
TUCKER, HARRIET TABER (MRS. DAVID E. WORRALL).... 7 Edison Ave., Medford Hillside, Mass.	Gen. Sci.	At home.
*WADE, CEYLON RAYMOND.....	Civ. Eng.	

1912

BARLOW, HENRY NEWELL..... Wassaic, N. Y.	Elec. Eng.	Dairy Farmer.
BIGELOW, CARLE MUZZY..... 16 Chestnut Terrace, Newton Centre, Mass.	Appl. Sci.	Member of Firm, Cooley & Marvin Co., 15 Ashburton Place, Boston, Mass.
*CALDWELL, DOROTHY WALCOTT.. M. S., R. I. S. C., 1914. M. S., Univ. of Mich., 1920. 226 South 12th St., Ann Arbor, Mich.	Civ. Eng.	Assistant in Hygiene, and Graduate Student, University of Michigan.
*CLARKE, PHILIP HARRISON.... 11 Washington Road, Scotia, N. Y.	Elec. Eng.	Electrical Engineer, General Elec- tric Co.
*COBB, ELECTRA HENRIETTA (MRS. JOHN L. SHERMAN).. R. F. D. 147, Mansfield, Mass.	Home Econ.	At home.
DOLL, WALTER..... Granville, New York.	Mech. Eng.	With Sheldon Slate Products Co.
*HENDERSON, ETHEL PIERCE (MRS. E. K. WILCOX).....	Appl. Sci.	
KENYON, ANNIE ELIZA (MRS. S. C. WEBSTER, JR.)... R. F. D., West Kingston.	Appl. Sci.	Teacher.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LARKIN, CHARLES HERBERT.	Civ. Eng.	Civil Engineer, with Real Estate Dept., Boston & Maine Railroad.
56 Bower St., West Medford, Mass.		
NUTTING, BERTHA MAY (MRS. LEVERICH G. LENHAM)	Home Econ.	At home.
163 Norwalk Ave., Buffalo, N. Y.		
PATTERSON, ARTHUR JOHN.	Elec. Eng.	Illuminating Engineer, Davis Electric Co., Washington, D. C.
1100 Fourth Ave., Richmond, Va.		
RICHMOND, FRED ALLEN.	Elec. Eng.	Mech. Valuation Pilot, N. Y. Central Railroad Co., Grand Central Terminal, New York City.
17 Stanley Place, Yonkers, N. Y.		
SHERMAN, JR. GEORGE WM.	Elec. Eng.	Assistant Professor of Physics, Purdue University.
M. S., Purdue Univ., 1914.		
4 Murdock Flats, West Lafayette, Ind.		
*SLATER ALLAE CORDELIA (MRS. ARTHUR J. MINOR)	Home Econ.	
WARNER, DAVID EDMOND, JR.	Agr.	Associate Professor, Poultry Husbandry, Conn. Agricultural College.
Storrs, Conn.		
WEBSTER, SAMUEL C., JR.	Agr.	Farmer.
R. F. D., West Kingston.		
WHELAN, WILLIAM JOSEPH.	Appl. Sci.	Supt. of Buildings, R. I. S. C.
Kingston.		

1913

ALEXANDER, RALPH IRWIN.	Mech. Eng.	Power Supervisor, Strathmore Paper Co.
Woronocho, Mass.		
BATES, REUBEN CHARLES.	Civ. Eng.	Student, B. U. School of Medicine.
80 East Concord St., Boston, Mass.		
BRETT, CLARENCE ELMER.	Agr.	Instructor in Poultry, R. I. S. C.
Kingston.		
BRIDEN, FRANK HAROLD.	Mech. Eng.	Supt. Dominion Works, Nicholson File Co.
Port Hope, Ontario, Canada.		
COHEN, BENJAMIN.	Elec. Eng.	Assistant Employment Manager, National Spun Silk Co.
227 Mt. Pleasant St., New Bedford, Mass.		
CONGDON, ESTHER LOOMIS (MRS. ARTHUR L. REYNOLDS)	Home Econ.	At home.
399 Cooke St., Waterbury, Conn.		
CORR, JOHN WILLIAM.	Appl. Sci.	Treasurer, The Greenwood Textile Supply Co.; Manufacturing Chemist.
East Greenwich.		
ELKINS, DOROTHY DEARBORN (MRS. ROBERT W. KENT)	Home Econ.	At home.
29 Morseland Ave., Newton, Mass.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ELKINS, MARGUERITE WHITE, Home Econ. (Mrs. ERROLL J. BLANCHARD), M. S., R. I. S. C., 1914, 33 High St., Lynn, Mass.		Assistant Research Bacteriologist, Boston Floating Hospital, Bos- ton, Mass.
HART, CRAWFORD PECKHAM.....Agr. 130 Sycamore St., Somerville, Mass.		With Federal Board for Vocational Education.
IRONS, WALTER COLWELL.....Agr. North Scituate, R. F. D. No. 2.		Farmer.
KYLE, THOMAS.....Agr. Box 159, Balboa, Canal Zone.		Marine Plumber.
MITCHELL, IRVING CALVARY....Appl. Sci. A. M., Brown Univ., 1920. Valley Falls.		Superintendent of Schools.
REDDING, WILLIAM FRANCIS...Elec. Eng. Porto Rico.		Second Lieutenant, Infantry.
REINER, WALDO.....Civ. Eng. 45 Strong Place, Brooklyn, N.Y.		With Wall Rope Works, Inc., Beverly, N. J.
REYNOLDS, ARTHUR LESLIE....Elec. Eng. Sc. B., Brown Univ., 1915. 399 Cooke St., Waterbury, Conn.		Teacher, Mathematics and Science, Wilby High School.
SLOCUM, GEORGE EDWIN.....Elec. Eng. 75 W. Mohawk St., Buffalo, N. Y.		Sales Engineer, McCarthy Bros. & Ford.
*STECK, FRANK.....Chem. Eng.		
TURNER, WALTER RAYMOND....Appl. Sci. 21 Sarah St., Providence.		Asst. Mgr., Glenlyon Yarn Dye Works, Phillipsdale.
WILCOX, ERROLL KENYON.....Civ. Eng. Peace Dale.		Principal, South Kingstown High School.
WOOD, SUSIE STANTON.....Home Econ. Utica, N. Y.		Dietitian, Faxon Hospital.
YOUNG, JAMES HANNIBAL.....Appl. Sci. 151 Joralemon St., Brooklyn, N. Y.		With National City Bank of New York.

1914

ALDRED, JAMES HILTON.....Mech. Eng. Ashton.		Chemist, Woonsocket Rubber Co.
ANDERSON, WILLIAM EDWARD.....Agr. 80 Sherman Ave., New Haven, Conn.		Graduate Student in Physiological Chemistry, Yale University.
ASPINWALL, FREDERICK OTTO..Chem. Eng. 57 Crystal Cove Ave., Winthrop, Mass.		Fire Prevention Engineer.
BAXTER, FRANK HOWARD....Mech. Eng. 1109 No. Broadway, Yonkers, N. Y.		Foreign Trade Representative, The National City Bank of New York.
BENSON, ROBERT JOHN.....Elec. Eng. 5963 Maple Ave., St., Louis, Mo.		Electrical Maintenance and Con- struction Engineer, Wagner Elec. Mfg. Co.

*BOULESTER, EDWARD JAMES....Appl. Sci.

NAME A	ADDRESS.	COURSE.	OCCUPATION.
BROWNING, HAROLD WILLIAM . . .	M. S., Univ. of Wisconsin, 1916. Ph. D., Univ. of Wisconsin, 1920. Kingston.	Appl. Sci.	Professor of Botany, R. I. S. C.
CONNOR, THOMAS ROWLEY	Cleveland, Ohio.	Civ. Eng.	Asst. Engineer, City Filter Plant.
DAVIS, HENRY ELLIS	100 Broadway, New York City.	Agr.	Mgr., Production Dept., American Surety Co.
ESTY, JAMES RUSSELL	M. S., Brown University, 1915. Ph. D., Brown Univ., 1918. 1739 H St., Washington, D. C.	Chem. Eng.	Bacteriologist National Canners' Association, Research Laboratory.
FINCH, MYRON WHITMARSH	M. S., Brown Univ., 1920. 24 High St., Buffalo, N. Y.	Agr.	Instructor in Biochemistry, University of Buffalo.
FORD, HELEN WHEELER	North Easton, Mass.	Home Econ.	Extension Service, Kansas Agr. College, Manhattan, Kan.
HAWKINS, MYRON ANGELL	618 Smith St., Providence.	Agr.	At home.
JONES, CARLTON WALTER	Saco, Me.	Civ. Eng.	Engineer, with Libby & Johnson.
KARMANN, HERMAN HARRY	156 Cardoni St., Detroit, Mich.	Civ. Eng.	Surveyor.
KINNEY, LORENZO FOSTER, JR. . . .	M. S., Univ. of Wisconsin, 1915. Kingston.	Appl. Sci.	State Leader Boys' and Girls' Club-work, Extension Service, R.I.S.C.
REINER, FRIEDA	M. A., Columbia Univ., 1921. 45 Strong Place, Brooklyn, N. Y.	Home Econ.	Teacher, Home Economics.
REINER, HERBERT	Portsmouth, N. H.	Agr.	With American Agricultural Chemical Co., 92 State St., Boston.
ROSSI, LOUIS	57 Oak St., Westerly.	Civ. Eng.	Assistant Engineer, Water Works and Sewers Dept.
SAFFORD, EDITH MARIE (MRS. HERBERT REINER) . . .	Portsmouth, N. H.	Home Econ.	At home.
SULLIVAN, JOHN LEO	9 Church Road, Newton, 58, Mass.	Mech. Eng.	Head of Drafting Dept., Vocational High School
TULLY, WILLIAM HENRY	Peace Dale.	Appl. Sci.	Farmer.
TURNER, HARVEY ROBERT	Marshall, Texas.	Civ. Eng.	Instructor in Mathematics, Bishop College.
WEBB, WILLIAM HARRY	90 West St., New York City.	Elec. Eng.	General Engineering and Consulting, Moody Engineering Co., Inc
WEBSTER, EARL CLIFTON	65 Daboll St., Providence.	Civ. Eng.	Principal Grammar School.

1915

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BALDWIN, GEORGE HOLLAND	Agr.	Salesman, Pawtucket Rendering Co.
BARNEY, RAYMOND LIVINGSTON	Appl. Sci.	Director and Supt., U. S. Fisheries Biological Station.
BEAUFORT, North Carolina.		
BELFIT, ROBERT WILLIAM	Chem. Eng.	Chem. Engineer, Scovill Mfg. Co.
328 Farmington Ave., Waterbury, Conn.		
BORDEN, NORMAN HARRISON	Chem. Eng.	Chemist, Standard Chemical Works.
Womelsdorf, Pa.		
BRECHIN, JOHN	Mech. Eng.	Efficiency Engineer, Nat. Tube Co., Lorain Plant.
42 Colonial Apartments, Elyria, Ohio.		
BROWNELL, KENNETH ALLEN	Chem. Eng.	Chief Chemist, Standard Bleachery Co., Carlton Hill, N. J.
11 Rutgers Place, Passaic, N. J.		
COLEMAN, CARL LAFAYETTE	Agr.	Instructor in Agriculture, Gilbert School.
20 Park Place, Winsted, Conn.		
DODGE, WILLIAM EARL	Civ. Eng.	Ensign, Executive Officer on Submarine Chaser, No. 294, care Postmaster, N. Y.
Block Island.		
GATES, CURTIS WOLCOTT	Chem. Eng.	Asst. Sec., Employers Assoc. of North Jersey.
45 Academy St., Newark, N. J.		
HALL, CARLISLE	Agr.	Instructor in Mathematics, Warwick High School.
5 Wendell St., Providence.		
HARDING, ADA LAPLACE	Home Econ.	In charge of Domestic Science in Public High School.
Ansonia, Conn.		
HARRIS, LEON IRVING	Elec. Eng.	With Chalmers Motor Co.
465 Lycaste Ave., Detroit, Mich.		
HUDSON, ROYAL CARLTON	Appl. Sci.	Student, Harvard Medical School.
6 Blackwood St., Boston, 17, Mass.		
HUNTER, ALBERT CLAYTON	Appl. Sci.	Bacteriologist, Bureau of Chemistry, Dept. of Agr.
Sc. M., Brown Univ., 1917.		
Ph. D., Brown Univ., 1918.		
816 B St., S. W., Washington, D. C.		
JACKOWITZ, JOHN LOUIS	Appl. Sci.	Medical Student, Yale Univ. Medical School.
347 Orange St., New Haven, Conn.		
KEITH, LAWRENCE FULLER	Agr.	Agricultural County Agent.
Van Buren, Arkansas.		
KIVLIN, ALFRED PATRICK	Elec. Eng.	Student in Graduate School, Harvard University.
43 School St., North Attleboro, Mass.		
LENNOX, FRANK JOSEPH	Chem. Eng.	Manufacturer and Dealer in Dye-stuffs, Oils, Soaps and Chemicals.
48 Front St., Woonsocket.		
MEADE, JOHN EDWARD	Civ. Eng.	Construction Engineer, with Agr. Chemical Co.
142 Arch St., Philadelphia, Pa.		
MILLER, WESLEY CLIFTON	Elec. Eng.	Supervising Engineer, Western Electric Co., 463 West St., New York.
7 Maple Court, Brooklyn, N. Y.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
NICHOLS, JOSEPH ELTON	Mech. Eng.	Second Lieutenant, Field Artillery, U. S. Army.
WOONSOCKET.		
NORDQUIST, HARRY O. VALDIMAR, Civ. Eng.		Civil Engineer,
89 Hamlin St., Providence.		
PARKER, RALPH LANGLEY	Agr.	Student, Iowa State College; Instructor in Science, Iowa State College.
Sc. M., Brown Univ., 1917.		
Ames, Iowa.		
WATSON, ADELAIDE GILBERT		
(MRS. FRANK H. BRIDEN) . .	Home Econ.	At home.
Port Hope, Ontario, Canada.		
WHITTAKER, LEROY ALLEN	Elec. Eng.	Captain, C. A. C.
Aberdeen Proving Ground, Md.		
WILCOX, HAROLD CLAYTON	Agr.	Teacher of Science, Columbus Academy.
1495 Franklin Ave., Columbus, Ohio.		

1916

ALDRICH, DANIEL GASKILL	Agr.	Head Master, Coe's Academy, and Pittsfield High School.
Pittsfield, N. H.		
BECKER, WILLIAM JOSEPH, JR., Mech. Eng.		Chief Inspector, Inspection Div., Ordnance Dept., U. S. A.
225 So. Van Dien Ave.,		
Ridgewood, N. J.		
BURR, DOROTHY ISABELLE	Home Econ.	At home.
(MRS. THOMAS W. FREEMAN),		
Rockland, Ill.		
CARLETON, EVERETT AUGUSTUS	Agr.	Chemist, Chemical Warfare Ser- vice, Edgewood Arsenal, Md.
Havre de Grace, Md.		
CHANTLER, AMBROSE ROYLE	Chem. Eng.	Chemist, with E. I. DuPont De Nemours Co., Dyestuffs Div.
130 West Ave., Pawtucket.		
CONYERS, CLARENCE JOHN	Agr.	Farm Manager.
Seekonk, Mass.		
CORDIN, GILBERT RALPH	Chem. Eng.	Secretary, New England Hosiery Co.
16 Harvard Ave., Providence.		
CURRAN, EMILIE MAY	Home Econ.	At home.
(MRS. NORMAN H. BORDEN),		
Womelsdorf, Pa.		
DANIELS, HENRY FALES	Civ. Eng.	Engineer, with C. D. Paige, Insur- ance.
17 Burlington St., Providence.		
FARON, FRANCIS ALOYSIUS	Elec. Eng.	Designing Engineer, General Elec- tric Company.
12 Hoigh St., Schenectady, N. Y.		
FIELD, ERNEST GEORGE	Mech. Eng.	Ingersoll-Rand Co.
115 Northampton St.,		
Easton, Pa.		
*FINE, SOLOMON	Appl. Sci.	
M. S., R. I. S. C., 1917.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRASER, DEAN BLENUS..... 178 Tremont St., Boston, Mass.	Civ. Eng.	Asst. Estimating Engineer, Turner Construction Co.
FREEMAN, THOMAS WILLIAM.... Camp Grant, Rockland, Ill.	Civ. Eng.	First Lieutenant, Co. B, 52nd Inf.
*GLASHEEN, RALPH EARLE..... 251 West 71st St., New York City.	Civ. Eng.	Asst. Superintendent Turner Construction Co.
*HANLIN, WILLIAM FRANK.....	Agr.	
HENRY, JAMES MURRAY..... Paintsville, Kentucky.	Mech. Eng.	Asst. to President, Bed Rock Petroleum Co. and Structure Oil Co.
HOLLEY, LEONARD STANLEY..... Wakefield.	Agr.	Farmer.
HOXSIE, ANNIE SARAH..... Canonchet.	Home Econ.	Teacher, Derby High School, 150 Caroline St., Derby, Conn.
KELLY, HENRY CLINTON..... 769 Commonwealth Ave., Detroit, Mich.	Civ. Eng.	Engineer, with E. I. DuPont De Nemours, Wilmington, Delaware.
LAGERSTADT, SETH FREDERICK HADLEY, Brockton, Mass.	Agr.	Ensign, U. S. Naval Reserve.
LEWIS, WILLIAM EMANUEL..... 70 Anthony St., East Providence.	Agr.	Asst. Mgr., Providence Farmers Exchange, 16 So. Water St., Providence.
LLOYD, LESTER WILLIAM..... Tiverton.	Agr.	Farmer.
LUSSIER, GEORGE EMILE..... 93 Highland Ave., Fitchburg, Mass.	Elec. Eng.	Engineer, Brown Bag Filling Machine Co.
MCLEOD, LEANDER WALLACE... Bridgeport, Conn.	Mech. Eng.	With Ashcroft Mfg. Co.
MEDBERY, HENRY EDMUND.... 125 Parker Hill Ave., Boston, Mass.	Appl. Sci.	Bacteriologist, U. S. Public Health Service.
MEEARS, ETTA ELIZABETH (MRS. ERNEST G. FIELD).... 115 Northampton St., Easton, Pa.	Home Econ.	At home.
MILNES, CHARLES IRVING.... 59 Dewey St., Providence.	Chem. Eng.	Chief Chemist, Wanskuck Co.
PALMER, THEODORE ANDREW..... Lakeville, Conn.	Agr.	Professor of Animal Husbandry and Physical Director, Riggs School.
PARKER, CLARENCE HOWARD... 121 Oakley Road, Belmont, 78, Mass.	Mech. Eng.	Mech. Draftsman, Package Confectionery Co., South Boston.
PRICE, MILTON HARRIS..... 29 Sessions St., Providence.	Agr.	First Lieutenant, Cavalry, Fort Sam Houston, Texas.
RANDALL, BERTHA ADELAIDE... 556 Cranston St., Providence.	Home Econ.	Chemist.
RANDALL, PHINEAS MUNSELL... 26 Ardmore St., Springfield, Mass.	Elec. Eng.	Assistant to Works Elec. Eng., Westinghouse El. Mfg. Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ROWELL, HOMER RANSOM. Poultney, Vermont.	Agr.	Professor of Agriculture, Troy Conference Academy.
SEIFERT, CHARLES EDWARD. . . . 4141 Georgia Ave., Cincinnati, Ohio.	Elec. Eng.	Service Engineer, Thomson Electric Welding Co.
SHORT, CARLETON WEBB. Gretna, Louisiana.	Chem. Eng.	Chemist.
VICTORY, THOMAS FRANCIS. . . . Warren.	Elec. Eng.	First Lieutenant, C. A. C.
WALMSLEY, EARL. 95 Frances Ave., Akron, Ohio.	Chem. Eng.	Goodyear Tire and Rubber Co.
YOUNG, VINCENT CASE. Plainfield, N. J.	Mech. Eng.	Testing Engineer, International Motor Co.

1917

AMES, ARNOLD WILLARD. Preble, N. Y.	Mech. Eng.	Engineer.
ANDERSON, JOHN GORDON. Boston City Hospital, Boston, Mass.	Appl. Sci.	Student, Harvard Medical School, Interne at Boston City Hospital.
ANTHONY, HAROLD CONGDON. 58 Concord St., Waterbury, Conn.	Agr.	Production Dept., Eastern Malleable Iron Co., Naugatuck Branch.
BARTELS, HENRY ARTHUR. 337 Madison Ave., Albany, N. Y.	Agr.	Asst. Bacteriologist, New York State Dept. of Public Health.
BROADFOOT, HENRY HARRINGTON, Westerly.	Chem. Eng.	Teacher, West Warwick High School.
BROWNE, ELIZABETH HOPE. . . . 232 Cottage St., Pawtucket.	Home Econ.	Home Demonstration Agent, Extension Service, Providence.
CLARK, JAMES ANDREW. 39 Salina St., Providence.	Chem. Eng.	Instructor in Chemistry and Dyeing, R. I. School of Design.
COHEN, HARRY. 1205 Clifton St., N. W., Washington, D. C.	Elec. Eng.	Assistant Examiner, U. S. Patent Office, Steam Engineering Division.
DUNHAM, LESLIE LINCOLN. Norwich, Vt.	Agr.	Master, Hanover High School, Hanover, N. H.
EASTERBROOKS, WILFRED ROSS. . Peace Dale.	Civ. Eng.	Draftsman, U. S. Engineer Office, Providence.
EBBS, ROBERT ALLEN. 34 Powell Ave., Newport.	Chem. Eng.	Second Lieutenant, 534th Engineers, Amer. Expd. Force.
FEARN, GEORGE ANDREW. 71 Daniels St., Pawtucket.	Appl. Sci.	With Jencks Spinning Co.
FLYNN, WILLIAM AUGUSTUS. . . . 19 Kensington Ave., Jersey City, N. J.	Civ. Eng.	Engineer, United Electric Light & Power Co. of N. Y.
GIBBS, RALPH WILLIAMS. 1179 High St., Williamsport, Pa.	Elec. Eng.	Plant Engineer, Lycoming Rubber Co.
GODDARD, FRANKLIN PERRY. . . . 29 Gould St., Newport.	Elec. Eng.	Shipbuilding, Fore River Plant, Quincy, Mass.
HARRY, CHARLES EDWARD. Marshall, Texas.	Agr.	Instructor in Science, Bishop College.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HAWKINS, CLINTON DEXTER. 120 Springfield St., Chicopee, Mass.	Chem. Eng.	Chemist, Page-Storms Drop Forge Co.
HILL, EDWIN DOUGLAS. Andover, N. J.	Agr.	Farm Manager, Wawayanda Farms.
JOHNSON, CHARLES VARNUM. 515 14th St., N. W., Washington, D. C.	Civ. Eng.	Highway Engineer, U. S. Dept. Agr.
KENDALL, DONALD JOHN. 201 Pleasant St., Brockton, Mass.	Agr.	Captain, 59th Co., 7th Regt., U. S. Marine Corps.
LAHN, ABRAHAM SAMUEL. Care Penn. R. R. Co., Mansfield, Ohio.	Civ. Eng.	Assistant, Eng. Corps, Penn. R. R.
LAWRENCE, SAMUEL EUGENE. 22 Shirley Ave., Revere, Mass.	Appl. Sci.	Physical Director, Revere Schools.
LEBOEUF, ALBERT ALPHONSE. 354 Hood St., Fall River, Mass.	Appl. Sci.	Student, in France.
McINTOSH, ALBERT EDWARD. 59 Lisbon St., Providence.	Civ. Eng.	Captain, Co. C, 15th Cavalry, Ohio Northern Univ., Ada, Ohio.
PYNE, JAMES FRANCIS. 12 Gifford St., Brockton, Mass.	Civ. Eng.	Ship Draftsman, Boston Navy Yard.
REDFERN, ERNEST ELMER. 1124 Fourth Ave., Ford City, Pa.	Chem. Eng.	Asst. Supt., Pittsburgh Plate Glass Co.
*REDFORD, DAVID ADAM.	Mech. Eng.	
RIECKEL, GRACE LILLIAN (MRS. LESTER W. LLOYD). Tiverton.	Home Econ.	At home.
RODMAN, SAMUEL LYMAN. Gould.	Agr.	Farmer.
SLOCUM, KENNETH MATTESON. 1105 Walnut St., Newton Highlands, Mass.	Civ. Eng.	Construction Engineer, Cooley & Marvin Co.
SMITH, HAROLD BURLIN. 25 Florence St., Brockton, Mass.	Appl. Sci.	Mechanical Cost Dept., W. F. Schrafft & Sons Corp., 160 N. Washington St., Boston, Mass.
TAYLOR, RAYMOND DOUGLAS. Bedford, Mass.	Agr.	Manager, Poultry and Fruit Farm.
TEW, JOSEPH GARDINER. 412 N. Eighth St., Manhattan, Kansas.	Appl. Sci.	Instructor in Mech. Drawing, Kansas State Agricultural College.
THAYER, AUBREY HARVEY. 1907 East 40th St., Cleveland, Ohio.	Elec. Eng.	Chief of Technical Branch, Ordnance Dept.
TILLINGHAST, THEOSE ELWIN. 221 West First St., Dayton, Ohio.	Mech. Eng.	Aeronautical Mechanical Engineer, with Eng. Div., Air Service.
WANSKER, HARRY ABE. 76 Quint Ave., Allston, Mass.	Civ. Eng.	Asst. Naval Architect, Radio-Dynamic Torpedo Unit, Coast Artillery Headquarters, Boston, Mass.
WELLES, ASHBEL RUSSELL. Wethersfield, Conn.	Agr.	With Comstock, Ferre & Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILLIAMSON, JAMES HUGH Newport.	Civ. Eng.	First Lieutenant, 210th Co., 3rd Regt., U. S. Marine Corps, Santo Domingo City, D. R.
WISBEY, HERBERT ANDREW 706 Hope St., Bristol.	Agr.	Asst. Principal, Colt Memorial High School.

1918

BARTON, HENRY, JR. 693 Hope St., Bristol.	Civ. Eng.	Agent in China, Foreign Service Class, Standard Oil Co. of N. Y., 25 East 11th St., N. Y. City.
BLAKE, NELSON EVERETT 117 Fourth St., Carney's Point, N. J.	Chem. Eng.	Chief Chemist, with Du Pont Powder Co.
BRIGHTMAN, MELVIN HAZARD 185 Albert Ave., Edgewood.	Agr.	With W. E. Davis & Co., Provi- dence.
CALL, ROY PORTER Stonington, Conn.	App. Sci.	Teacher of Mathematics, Stoning- ton High School.
CAMERON, LORNE ATWOOD	Agr.	Asst. Supt., Sexton Canning Co.
CHANDLER, RUTH WESTLAKE (Mrs. NORMAN W. DOVE), 17 Glendale Ave., Providence.	Home Econ.	At home.
CONDON, JOHN JEROME 98 Church St., Bristol.	Chem. Eng.	Instructor in Chemistry & Physics, West Warwick High School.
COYNE, SARAH ELIZABETH 1126 Boylston St., Boston, Mass.	Home Econ.	Asst. Biological Chemist, Boston Floating Hospital.
DANEKER, JOHN LACHLAN 119 Arnold St., Edgewood.	Mech. Eng.	
DEVINE, JAMES JOSEPH 61 Centre St., Bridgewater, Mass.	Mech. Eng.	With F. W. D. Co., Clintonville, Wisconsin.
EDMISTON, IRMA RATHBUN Sigma Kappa House, Southern Methodist University, Dallas, Texas.	Home Econ.	Bacteriologist, Firm of Drs. Baird, Doolittle, McBride & Flynn.
FAIRBANKS, GEORGE HENRY Pottsville, Pa.	Elec. Eng.	District Mgr., New England Fuel and Supply Co.
GILLIS, WILLIAM ELLIS Box 616, Stonington, Conn.	Appl. Sci.	Teacher of Science, High School.
GROVES, LESTER DAVIS Mt. Holley, N. J.	Agr.	Supervisor, Burlington Co. Cow- Testing Association.
HAGGARTY, CHARLES WILLIAM Allenton.	Elec. Eng.	Weaver.
HASKELL, DOROTHY ESTELLE West Barrington.	Home Econ.	Chemist and Bacteriologist, City Dept. of Milk Inspection, Provi- dence.
KINNEY, ESTHER LEE (Mrs. CARROLL H. MAGOON), Blanton, Florida.	Home Econ.	At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LERMOND, CHARLES ELWYN... 3408 34th Place, N. W., Washington, D. C.	Mech. Eng.	Draftsman, Civil Service, U. S. Nitrate Plant No. 1, Sheffield, Alabama.
LYNCH, DANIEL JOSEPH, JR.... Brookton, Mass.	Mech. Eng.	With General Electric Co., Lynn, Mass.
MASON, CHARLES EVERETT..... Peace Dale.	Agr.	Instructor in Agriculture, South Kingstown High School.
MEYER, ARTHUR HENRY FREDERICK, 139 Webster Ave., Providence.	Chem. Eng.	Chemist, Providence Gas Co.
SPARGO, RAYMOND ALEXANDER..... Box 473, Westerly.	Agr.	Farmer, Overhill Farm.
SPRINGER, FRANKLIN HOXSIE.. 16 Hunter St., Providence.	Appl. Sci...	Asst. Chemist, Davol Rubber Co.
STILLMAN, HANNÄH AMELIA... Lexington, Kentucky.	Home Econ.	Head of Home Economics, Ham- ilton College.
STONE, ALBERT..... Colonial Hotel, Penn's Grove, N. J.	Appl. Sci.	Chemist, Indigo Laboratory, E. I. DuPont de Nemours Co., Deep Water, N. J.
STRAND, HENRY RICHARD..... Newport.	Agr.	Farmer, Bethshan-in-the-Woods.
TORGAN, MILTON..... 318 Willard Ave., Providence.	Appl. Sci.	Submaster, Warwick High School, Apponaug.
WALSH, JAMES RUSSELL..... 99 So. Robert Blvd., Dayton, Ohio.	Mech. Eng..	Aeronautical Mech. Eng., McCook Field, Dayton, Ohio.
WANSKER, JOSEPH..... 1240 Cranford Ave., Lakewood, Ohio.	Chem. Eng.	Chief Chemist, Master Builders Co.
WILDER, HAROLD KENNETH... 80 Maple St., West Roxbury 32, Mass.	Chem. Eng.	Research Assistant in Chemistry, Boston Floating Hospital.

1919

BURGESS, WAYLAND MCCOLLEY, Worcester, Mass.	Chem. Eng.	Instructor in Chemistry, Worcester Polytechnic Institute.
CARGILL, DANIEL OLNEY..... Valley Falls, R. F. D. No. 2.	Civ. Eng.	Civil Engineer, 70 Church St., Ded- ham, Mass.
CARPENTER, EDWARD LEROY . Wakefield.	Mech. Eng..	Instructor in Mechanical Engineer- ing, Case School of Applied Science, Cleveland, Ohio.
CARPENTER, PHILIP MARTIN... 213 Seward Place, Schenectady, N. Y.	Elec. Eng.	Student Engineer, Testing Dept., General Electric Co.
CREEDON, MICHAEL VINCENT.. Dalzell, Charles Davies.....	Mech. Eng.	Headmaster, Weare High School.
DALZELL, CHARLES DAVIES..... Weare Centre, N. H.	Agr..	
DOWLING, JOHN JOSEPH..... 614 College Ave., Baton Rouge, La.	Chem. Eng..	Engineer of Gas Operation, Baton Rouge Electric Co.

NAME AND ADDRESS.

COURSE.

OCCUPATION.

GAMBLE, EDWARD HENRY.	Chem. Eng.	Chemist, with E. I. DuPont de Nemours Co.
198 West Main St., Penn's Grove, N. J.		
GARDNER, ANNA PECKHAM.	Home Econ.	At home.
(MRS. JOHN H. LASELL),		
59 Bridgham St., Providence.		
HARRINGTON, HERMAN BATTEY.	Agr.	Farmer.
Greene.		
HILDRETH, CHARLES TEW.	Elec. Eng.	Fire Insurance Engineer, Factory
Box 310, Wakefield.		Ins. Asso., Hartford, Conn.
HOLLEY, ARTHUR TUCKER.	Agr.	In farm and ice business.
Wakefield.		
IRONS, MERRILLA ALTHEA.	Home Econ.	Teacher, Esmond.
North Scituate.		
KEEGAN, LESLIE ARTHUR.	Agr.	Instructor in Agronomy, R. I. S. C.
Kingston.		
KINNEY, HELEN WELLS.	Home Econ.	Asst. Laboratory Technician, Grace
1418 Chapel St., New Haven, Conn.		Hospital.
MARX, HOWARD EARLE.	Civ. Eng.	With Texas Oil Co., Burkburnett,
		Texas.
MITCHELL, JAMES ALBERT.	Elec. Eng.	Electrical Draughtsman, Hartford
3 Alden St., Hartford, Conn.		Electric Light Co.
MURPHY, JAMES ALOYSIUS.	Chem. Eng.	
MURRAY, RUTH GOODWIN.	Home Econ.	Dietitian, Boston Dispensary.
145 Hemenway St.,		
Suite 48, Boston, Mass.		
NICHOLS, RUHAMAH ROBINSON, Home Econ.		Laboratory Apprentice, N. Y. State
259 Quail St., Albany, N. Y.		Dept. of Health.
O'BRIEN, CHARLES FRANCIS.	Mech. Eng.	Assistant Engineer, with Western
195 Broadway, New York City.		Union Telegraph Co.
PETERSON, THURSTON WALDEMAR,		Superintendent, Sheldon Slate Pro-
Mech. Eng.		ducts Co.
22 Mettowee St., Granville, N. Y.		
SHIPPEE, FLORENCE LOUISE.	Home Econ.	Student Dietitian, at Pennsylvania
Eighth and Spruce Sts.,		Hospital.
Philadelphia, Pa.		
SMITH, PRISCILLA DACOSTA.	Home Econ.	Dietitian, U. S. Public Health Ser-
200 Park Ave., Woonsocket.		vice, Dwight, Ill.
SPENCER, LEANDER BURNSIDE. Chem. Eng.		Salesman, with Burroughs Adding
P. O. Box 176, Wickford.		Machine Co.
SULLIVAN, CHARLES McMANUS,		Chemist, Providence Gas Co.
19 Roanoke St., Providence. Chem. Eng.		
THORNTON, ALBERT ANGELL.	Agr.	Farming Instructor and Supervisor,
Box 25, R. D., Franklin, Mass.		Arnolds Mills.
WAUGH, GEORGE LINCOLN.	Agr.	Agent in Dairying, U. S. Dept. of
Durham, N. H.		Agriculture
WELLS, LESTER EARL.	Elec. Eng.	Lieutenant of Engineers, U. S. Coast
U. S. Coast Guard Cutter,		Guard.
Tuscarora, Key West, Florida.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
YOUNG, MARGERA LENORE... 1416 Chapel St., New Haven, Conn.	Home Econ.	Technician, Pathological Laboratory, Grace Hospital.

1920

BAKER, LOUISE.....	Home Econ.	Graduate Student, Columbia University, (College of Physicians and Surgeons.)
Furnald Hall, Columbia University, New York, N. Y.		
BEASLEY, DORALD DEWEY....	Chem. Eng.	Fire Ins. Engineer, with What Cheer and Hope Factory Mutual Insurance Co's., Room 716, Grosvenor Bldg., Providence.
264 Providence St., Woonsocket.		
BIGGS, FRANCIS LINCOLN.....	Mech. Eng.	Engineering Assistant, Buildings Dept., Bell Telephone Company of Pennsylvania.
4711 Hazel Ave., Philadelphia, Pa.		
BRIGGS, FREDERIC ROBINSON.....	Agr.	In Sales Dept., The H. P. Stone Co., Springfield, Mass.
44 W. School St., Westfield, Mass.		
CAMPBELL EMILY CATHERINE.	Home Econ.	Clinical Executive, Food Clinic, Boston Dispensary.
25 Bennet St., Boston, Mass.		
CAPLAN, ISRAEL.....	Appl. Sci.	Salesman, Weybosset Diamond Co.
131 Dudley St., Providence.		
CARNIE, WILLIAM BROWN.....	Elec. Eng.	With General Electric Co.
Lynn, Mass.		
CLARK, ARTHUR LINCOLN.....	Agr.	Student, Cornell University.
Forest Home, Ithaca, N. Y.		
CLARKE, HORACE WILBUR....	Mech. Eng.	Engineer Traffic Dept., Bell Telephone Co. of Pa.
4711 Hazel Ave., Philadelphia, Pa.		
COHEN, SAMUEL HARRY.....	Elec. Eng.	Student Engineer, General Electric Co., Lynn, Mass.
24 Bellingham Ave., Blackmont, Mass.		
CRUICKSHANK, JOHN WILLIAM...	Civ. Eng.	Inspector of Bridges and Buildings for Rhode Island Company.
247 Cypress St., Providence.		
DAMON, LOUISE ELMORE.....	Home Econ.	Assistant Dietitian, Food Service Dept. of U. S. Government Hotels.
Washington, D. C.		
DAWSON, WILLIAM.....	Civ. Eng.	Civil Engineer, Pennsylvania Railroad, Philadelphia, Pa.
96 Lowell St., Methuen, Mass.		
EDWARDS, MILDRED ELIZABETH,	Home Econ.	Asst. Bacteriologist, State Board of Health, Providence.
Kingston.		
GREENE, WHITNEY EASTMAN..	Mech. Eng.	Marine Engineer, Diesel Dept., Snow-Holly Works, Worthington Pump & Machinery Corporation.
258 Lexington Ave., Buffalo, New York.		
GREENHALGH, FRANK ELMER...	Civ. Eng.	U. S. Engineers' Office, Providence.
Chepachet.		
HASLAM, ARTHUR EDMOND.....	Agr.	Cow Tester, Providence County Farm Bureau.
128 Congress Ave., Providence.		
HOLLEY, CHARLES POTTER...	Mech. Eng.	Road Erecting Engineer, with York Mfg. Co.
527 W. Market St., York, Pa.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HOLMES, JOHN FOSTER. 23 Chapel St., Needham, Mass.	Agr.	In Fertilizer Sales Management Dept., Consolidated Rendering ing Co. of Boston.
HUDSON, ALBERT SPRAGUE. 17 Constitution St., Bristol.	Agr.	Teacher, Vocational Agriculture, Colt Memorial High School.
KNOTT, JR., JAMES EDWARD. 351 Federal Building, Newport.	Agr.	County Agricultural Agent.
KOHLBERG, RUDOLF HORTON. Curtis Bay Hotel, Baltimore, Md.	Agr.	With F. H. Royster Fertilizer Co.
KWASHA, LEONARD JAMES. 269 Orms St., Providence.	Chem. Eng.	With Davol Rubber Co.
*LUTHER, GEORGE EDWARD.	Appl. Sci.	
MALLOY, GEORGE EDWARD.	Mech. Eng.	
MARTELL, NUMAN ALLEN. Lynn, Mass.	Elec. Eng.	With General Electric Co.
MURPHY, MAURICE VINCENT. 221 Fall St., Seneca Falls, N. Y.	Mech. Eng.	In Sales Engineering Department, Gould Pump Co.
NORTHUP, KENNETH LEROY. 4711 Hazel Ave., Philadelphia, Pa.	Elec. Eng.	Engineer, Traffic Dept., Bell Tele- phone Co. of Pa.
PETERSON, ESTHER WILHELMINA, Exeter.		With Exeter School.
PIHL, ROLAND TAYLOR. 459 7th St., Brooklyn, N. Y.	Mech. Eng.	Security Salesman, H. W. Dubiske & Co.
SEABURY, DOUGLAS BEVERIDGE. Care Y. M. C. A., Charleston, South Carolina.	Agr.	With Aghepoo Fertilizer Co.
SISSON, ALBERT PECKHAM. Trenton, New Jersey.	Agr.	Tester, Mercer County Dairy Rec- ord Association.
SMITH, HOWARD BUCKLIN. 552 Plainfield St., Providence.	Appl. Sci.	Science Teacher, Cranston High School.
SPINK, HERBERT ELMER. Box 26, Davisville.	Civ. Eng.	Civil Engineer, Maintenance Dept. of N. Y., N. H. & H. Railroad.
STILLMAN, ELISABETH. Philadelphia, Pa.	Home Econ.	Pupil Dietitian, Pennsylvania Hos- pital.
THACKRAY, ELSIE LAW. New Ipswich, N. H.	Home Econ.	Instructor in Science and English, Appleton Academy.
TWEDELL, WILLIAM THEODORE. Keene, N. H.	Agr.	Cow-Test Supervisor, Farm Bureau.
VENEZIALE, ANTHONY. 63 Gesler St., Providence.	Civ. Eng.	With Famiglietti Construction Co.
WHITFORD, ADA ELIZABETH. 568 Chapel St., New Haven, Conn.	Home Econ.	Teacher of Domestic Science, Boardman Trade School.
WHITFORD, AMY ANN. Polytechnic, Montana.	Home Econ.	Teacher of Domestic Science and Elementary Chemistry.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILBOURN, VERNON JAMES..... 17 Alger Ave., Providence.	Appl. Sci.	Chemist, Field's Point Mfg. Co.
WILEY, JOHN DOUGLASS..... Bridgeton, N. J.	Agr.	Foreman, The Seabrook Farms.
WITTMAN, VICTOR SIMON..... R. F. D., Wakefield.	Agr.	Farmer.

Advanced Degrees.

1907

MASTER OF SCIENCE.

RODMAN, WALTER SHELDON..... B. S., R. I. S. C., 1904

1910

MASTER OF SCIENCE.

WHITING, ALBERT LEMUEL..... B. S., Mass. Agr. College, 1908

1911

MASTER OF SCIENCE.

HAMMETT, FREDERICK SIMONS..... A. B., Tufts College, 1908

1914

MASTER OF SCIENCE.

CALDWELL, DOROTHY WOLCOTT..... B. S., R. I. State College, 1912

ELKINS, MARGUERITE WHITE..... B. S., R. I. State College, 1913

1915

CIVIL ENGINEER.

MINOR, ARTHUR JACOB..... B. S., R. I. State College, 1911

1916

MASTER OF AGRICULTURE.

ADAMS, GEORGE EDWARD..... B. S., R. I. State College, 1894

LEWIS, HARRY REYNOLDS..... B. S., R. I. State College, 1907

WILKINSON, ALBERT EDMUND..... B. S., R. I. State College, 1906

1917

MASTER OF SCIENCE.

*FINE, SOLOMON..... B. S., R. I. State College, 1916

SPENCER, GEORGE EDWARD..... B. Sc., Syracuse University, 1914

1920

MASTER OF SCIENCE.

HEATH, BERTHA MAY..... B. S., R. I. State College, 1910

CIVIL ENGINEER.

JOHNSON, CHARLES VARNUM..... B. S., R. I. State College, 1917

*Deceased.

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KINGSTON, R. I.

1922

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MAY, AUGUST, NOVEMBER, FEBRUARY

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THE OXFORD PRESS, PRINTERS, PROVIDENCE

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RHODE ISLAND STATE COLLEGE

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DR. JOSEPH B. MUNROE.....	Warren
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MR. I. LINCOLN SHERMAN.....	Newport
MRS. DAVID J. WHITE.....	Davisville

*Died Jan. 24, 1922.

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Professor of Zoölogy

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Dean of Agricultural Department and Professor of Agronomy

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Professor of Educational Psychology

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Professor of Industrial Chemistry

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Professor of Domestic Art

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Professor of Botany

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Assistant Professor of Dairying and Farm Machinery

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Assistant Professor of Mathematics

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Assistant Professor of English Literature

MABEL DEWITT ELDRED, B. S.,

Assistant Professor of Art

JOSEPH CHURCH,

Captain, United States Army

Assistant Professor of Military Science and Tactics

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Physical Director and Instructor in Chemistry

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Instructor in Mechanical Engineering

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Instructor in Poultry Husbandry

MAHLON GILMAN KNOWLES, B. S.,

Instructor in Mechanical Engineering

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Instructor in Mechanical Engineering

GERTRUDE HUGHES, B. S.,

Instructor in Zoölogy

LESLIE ARTHUR KEEGAN, B. S.,

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EDWARD AVERY RICHMOND, B. S.,

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*IDA SCHWEDLER HARRINGTON,

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Bursar

WILLIAM JOSEPH WHELAN, B. S.,

Superintendent of Buildings

*Also State Supervisor in Public Schools.

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 BLANKET TAX.—Professors Tyler, Barlow, Wales, Mr. Keaney.
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 FIRE.—Professors Burdick, Adams, Mr. Whelan.
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 SCHOLARSHIP AND STUDENT AID.—Professors Bills, Peck, Mr. Brett.
 EXAMINATION OF ENTERING AND CONDITIONED STUDENTS.—Professors Jackson, Coggins.
-

Experiment Station Staff

HOWARD EDWARDS, A. M., LL. D.....	} President of the College. } Member <i>ex-officio</i> .
BURT L. HARTWELL, Ph. D., Director.....	Agronomy, Chemistry.
HENRY G. MAY, Ph. D.....	Animal Breeding and Pathology.
P. H. WESSELS, M. S.....	Associate, Chemistry.
PAUL S. BURGESS, Ph. D.....	Associate, Chemistry.
F. R. PEMBER, M. S.....	Associate, Glasshouse Experiments.
S. C. DAMON, B. S.....	Assistant, Field Experiments.
F. K. CRANDALL, B. S.....	Assistant, Field Experiments.
ROBERT L. JONES, B. S.....	Assistant, Chemistry.
MYRON G. HOLMES.....	Assistant, Chemistry.
WALTON H. SCOTT, B. S.....	Assistant, Animal Breeding and Pathology.
MARY E. WILLIAMS, B. S.....	Assistant, Animal Breeding and Pathology.
NATHANIEL HELME	Meteorologist.
H. ALIDA BIRCH.....	Librarian.

Extension Service Staff

HOWARD EDWARDS, LL. D.....	} President of the College. } Member <i>ex-officio</i> .
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Director, and *State Leader in County Agent Work	
LORENZO FOSTER KINNEY, JR., M. S.....	*State Leader in Club Work
MRS. IDA SCHWEDLER HARRINGTON,	
*State Leader in Home Demonstration Work	
ELIZABETH HOPE BROWNE, B. S.....	*District Home Demonstration Leader
HOWARD HALDANE HAWES.....	†County Agent, Providence Co. District
JAMES EDWARD KNOTT, JR., B. S.....	†County Agent, Newport Co. District
FRANCIS SPINK MADISON, B. S.....	†County Agent, Southern R. I. District
DEBORAH PROVOST CUMMINGS, B. S.,	
†Home Demonstration Agent, Newport County Farm Bureau	
RUTH GOODWIN MURRAY, B. S.,	
†Home Demonstration Agent, Southern R. I. Farm Bureau	

Office Assistants

Executive Office

FLORENCE ROLLINSON	Bookkeeper
ALICE M. WALKER	Bookkeeper
MARGARET QUINN	Stenographer
RUTH WATSON	Assistant

Experiment Station

ELIZABETH BROWN.....	Stenographer and Accountant
H. ALIDA BIRCH.....	Librarian and Stenographer
SARAH E. COOK.....	Office Assistant

Extension Service

ALICE INEZ McMEEHAN, M. A.....	Secretary to the Director
MARY KAY GATES.....	Filing Clerk
ANNA LAURA CLARK.....	Stenographer
MARION LUCILE BARBER	Stenographer

*In coöperation with United States Department of Agriculture.

†In coöperation with the United States Department of Agriculture and Farm Bureaus.

College Calendar

Tuesday, September 19, 1922, 9 A. M.,

Examination of Entering and Conditioned Students

Wednesday, September 20, 9 A. M. Registration

Thursday, September 21, 8 A. M. Recitations Begin

Thursday, October 12, Holiday. Columbus Day

Tuesday, November 7, Holiday. Election Day

Saturday, November 11, Holiday. Armistice Day

Saturday, November 18, 1 P. M. First Quarter Ends

Monday, November 20, 8 A. M. Second Quarter Begins

Wednesday, November 22, 12 M. } Thanksgiving Recess

Monday, November 27, 8 A. M. }

Saturday, December 16, 12 M. } Christmas Recess

Tuesday, January 2, 1923, 8 A. M. }

Friday, February 9, 4:30 P. M. First Term Ends

Tuesday, February 13, Registration, 9 A. M. Second Term Begins

Wednesday, February 14, 8 A. M. Recitations Begin

Thursday, February 22, Holiday. Washington's Birthday

Wednesday, March 28, 4:30 P. M. } Easter Recess

Tuesday, April 3, 1 P. M. }

Saturday, April 13, 1 P. M. Third Quarter Ends

Monday, April 16, 8 A. M. Fourth Quarter Begins

Friday, May 11, Holiday. Arbor Day

Saturday, May 12. Interscholastic Field Meet

Wednesday, May 30, Holiday. Memorial Day

Sunday, June 17. Baccalaureate Address

Monday, June 18. Commencement

CALENDAR 1922

JANUARY

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RHODE ISLAND STATE COLLEGE

Foundation

The college is one of the so-called land-grant colleges. Of the purpose of these institutions Senator Morrill, the author of the national legislation which brought them into existence in all the states, says :

“The fundamental idea was to offer an opportunity in every state for a liberal and larger education to large numbers, not merely those destined to sedentary professions, but to those needing higher instruction for the world’s business, for the industrial pursuits and professions of life.” Again he says: “It was to give a chance to the industrial classes of the country to obtain a liberal education, something more than what was bestowed by our universities and colleges in general, which seemed to be based more on the English plan of giving education only to what might be called the professional classes, in law, medicine, and theology.”

The college has also a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows :

(1) The interest on \$50,000, which was the net amount received by the State from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.

(2) The annual appropriation of \$15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.

(3) The annual appropriation of \$25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as

follows: "To be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the State under the Adams Act of 1906, yielding each year \$15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting yearly to \$25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The funds coming from the general government to the State under the Smith-Lever Act of 1914, amounting yearly to \$10,000. This fund is exclusively for extension work in agriculture and home economics.

(7) The annual maintenance fund from the State, at present, \$100,000, used for all the purposes for which the funds of the general government cannot be used: *e. g.*, for executive and administrative work; for heating, lighting, and maintenance of buildings; for the teaching of modern languages other than English; for the teaching of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroly revised during the years 1906-07 and 1907-08. The course in home economics was introduced in 1908.

Object and Organization

The function of Rhode Island State College is to aid in fostering the agricultural, industrial, and home-making life of the State. This it does in three ways: 1. by the investigation and discovery of new truths more or less directly applicable in agriculture and the industries; 2. by the direct distribution of information to the people; 3. by the organization and administration of definite courses of instruction designed to fit young men and young women for effective work in the vocational pursuits.

The first of these duties is performed by the

Experiment Station

for a description of the work of which the reader is referred to the report of the director, included in the report of the Board of Managers for the current year. A statement of its staff organization may be found on page 6 of this catalog.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all who desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, the

College Extension Division

is organized under provisions of the Smith-Lever Act, according to the recommendations of the Federal Department of Agriculture and the present prevailing practices thruout the country. The work is now arranged on a project basis and the following is a summary of the projects formulated and approved and now in force.

PROJECT No. 1. ADMINISTRATION: This project outlines plans for organization and supervision of all the different lines of work in the Extension Division, including arrangements of budgets, organization of office work, preparation and distribution of publications, employment and supervision of workers, preparing reports of work, approval of requisitions for supplies and in general coördinating all the different activities in this branch of the college. The work is placed in charge of a Director of Extension, who is also State Leader of County Agents.

PROJECT No. 2. COUNTY AGENT WORK: This project provides that there shall be organized in the State three farm bureau districts and that the college and the U. S. Department of Agriculture will coöperate with each of the three Farm Bureaus in the employment and supervision of a county agricultural agent. All county agents are assisted by the State Leader and by Extension Committees at the college in formulating projects for the work suggested by the Farm Bureau organizations, local Farm Bureau Committees, or by the college, and so far as possible specialists from the college aid the agents in carrying out the work under these projects.

PROJECT NO. 3. HOME ECONOMICS: A State Leader in Home Economics Extension work is engaged to organize and conduct extension work thruout the State, for the purpose of giving instruction by means of demonstrations, personal conferences, lectures, publications, correspondence, and otherwise, concerning,—(a) Foods; their characteristics, nutritive qualities, and economical production; selection and preservation, preparation and serving. (b) Fabrics; their qualities and adaptations, methods of making into clothing and articles for household use; approved methods and agents used in laundering; care and preservation. (c) House planning; remodeling, rearrangements to secure convenience in household work and management; effective heating, lighting, water supply and sewage disposal systems. (d) Household management; the proper furnishing and keeping of the house for the purpose of economic efficiency, comfort and beauty, together with simple methods of household accounting. (e) Home industries of such nature as may fit in with broad types of farming and with the financial resources, tastes, and ambitions of particular families or groups of families in relation to supplying home needs and accessible markets.

So far as finances permit, Farm Bureaus will be encouraged to employ home demonstration agents and as soon as a home demonstration agent is settled in a farm bureau, home economics work in that district will be carried on in coöperation with the Farm Bureau, the State Leader being recognized as joint supervisor of the work with the Farm Bureau.

Two such demonstration agents are now employed, one by the Newport County Farm Bureau, and one by the Southern Rhode Island Farm Bureau.

PROJECT NO. 4. CLUB WORK: A State Leader with such district assistance as circumstances warrant and funds will permit is employed to conduct demonstrations with boys and girls in farm and home activities; and to organize them into clubs that take up special projects with field crops and home gardens, home canning, also poultry, pigs, and other farm animals. Instruction is given in methods of marketing crops and animals and the best way to save the surplus food products by home canning and how to prepare the canned goods for table use or to market them. Efforts are made to furnish the clubs with local leadership and field instructions essential to success in the work.

Projects 5, Agronomy, 6, Poultry Husbandry, and 7, Dairy Extension, have been discontinued for want of funds with which to carry them on.

Engineering Extension Work

In the engineering department, as well as in the other branches of the college, the endeavor is to be of the greatest possible service to the people of the State, not only in the matter of providing formal instruction to students coming to the college, but also in giving help and information to those outside the college enrollment who are desirous of extending their technical knowledge, and to whom, for one reason or another, a regular college course is impossible.

To this end there has been offered in the past a short course of two years' duration, in which instruction has been given in the elements of engineering. Experience, however, has shown that those most eager to avail themselves of this kind of instruction, and those who would be most helped by it, are unable to leave their regular duties to attend classes at the college.

As a consequence, the short course work in engineering at the college has been discontinued, and in its place has been inaugurated the plan of extension work in engineering. Instead of taking the man away from his regular duties to bring him to the work, the present plan is to carry the work to the man.

This extension work is carried out in two chief ways,—by means of separate lectures on specific topics, and by means of progressive study in organized classes. The subjects presented are all of a technical character and are adapted to the particular needs and capabilities of the classes.

The present requirements for such class work are that a suitable place for meeting be provided, and that the attendance be regular. This regularity of attendance is a matter of the greatest importance, since without it little or no progress is possible.

Classes have been conducted in various places in The Use of the Slide Rule, Mechanism and Shop Calculations, Power Plant Computations, etc. Instruction in these and any other desired branch of engineering may be had by citizens of the State by complying with the requirements mentioned, the number of such courses being limited only by the available time of the members of the department. Also lecturers will be provided to present various phases of engineering before technical organizations and engineering societies.

The College as an Educational Agency

In its third form of activity, the purpose and work of Rhode Island State College is to give college training and culture to young men and young women, not in spite of, but thru and with, vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroly efficient worker.

Requirements for Admission to the Degree Courses

UNITS

The requirements for admission are reckoned in units. A "unit" represents the successful completion of a year's study of a subject, to which have been devoted not less than one hundred and twenty recitation periods of sixty minutes each, or their equivalent (*e. g.* one hundred and eighty periods of forty minutes each). Fifteen units are required. A student may obtain this amount of entrance credit from high-school work or from examination.

GROUPS

The entrance subjects are divided into two groups, A and B. Those in A, unless otherwise indicated, are required of all candidates for admission. Candidates who have not studied algebra the past year are urged to review the subject during the summer before entering college. Observance of this warning will prevent many failures in college work.

GROUP A

The school year is reckoned at thirty-six weeks, the minimum length.

English	108 weeks.....	3 units.
Modern Language—other than English...	72 weeks.....	2 units.
Algebra—for engineering and applied science students, 54 weeks....	1½ units.	
Algebra—for agricultural and home economics students, 36 weeks...	1 unit.	
Geometry, Plane	36 weeks.....	1 unit.
Geometry, Solid—for engineering students only, 18 weeks.....	½ unit.	
Physics or chemistry.....	36 weeks.....	1 unit.
History	36 weeks.....	1 unit.

The remainder of the fifteen units must be selected from

GROUP B*

No subject is accepted for more than the amount here stated or for less than one-half of a unit.

Foreign Language	216 weeks	6 units.
Geometry, Solid—for other than engineering students, 18 weeks . . .		$\frac{1}{2}$ unit.
Botany	36 weeks	1 unit.
Algebra—for students in agriculture and home economics, 18 weeks .		$\frac{1}{2}$ unit.
Chemistry	36 weeks	1 unit.
Geology	18 weeks	$\frac{1}{2}$ unit.
Physiography	36 weeks	1 unit.
Physiology	18 weeks	$\frac{1}{2}$ unit.
History	108 weeks	3 units.
Drawing	36 weeks	1 unit.
Domestic Science	18 weeks	$\frac{1}{2}$ unit.
Shop Practice	18 weeks	$\frac{1}{2}$ unit.
Farm Practice	18 weeks	$\frac{1}{2}$ unit.
Agriculture	72 weeks	2 units.

REGISTRATION

Registration occurs on the first day of each term, from 9 A. M. to 12 M., and from 1 P. M. to 4 P. M. A special fee of one dollar per day will be charged for registration after the first day of each term.

A fee of one dollar per day is charged for absence immediately preceding or following a holiday or vacation.

Each student is required to sign the following form of application before registering for the current year:

I hereby make application for registration as a student in Rhode Island State College for the year. In consideration of such registration and the attendance consequent thereupon, I hereby engage and obligate myself cheerfully to observe and conform to the rules of said college, having specifically in mind, without excluding others, that in relation to hazing and class disturbances. I further engage promptly and on my own motion to withdraw from the college whenever I find myself unable or unwilling to carry out the obligation herein assumed.

METHODS OF ADMISSION

On any or all of the subjects named in both groups, satisfactory standings from any reputable high school will be accepted in lieu of examination, on presentation of a copy of the student's full record

*Other subjects not here named will receive due consideration if presented on the application blank, with a statement of the work done.

in the high school showing clearly the nature of the work pursued in each subject, time devoted to it, and grade of work done. This copy must be duly signed by the proper official of the school, and must be accompanied by a certificate of good moral character. The latter, however, may be from any reputable source. On application, blanks showing definitely the full nature of the information desired from the high school will be furnished.

Candidates not presenting satisfactory standings from reputable high schools will be examined, over ground corresponding to the number of units attached, on all the subjects of Group A and on such of Group B as they may offer. Examinations for entrance will be held at the opening of the college year in September, as announced in the calendar, page 8.

SPECIFICATIONS OF GROUND TO BE COVERED*

GROUP A

These subjects, with the exception stated, are required of all students to the extent indicated by the number of units designated in each case.

Languages

ENGLISH, 3 UNITS.—In English two aims are sought: first, a knowledge of the language—including the acquisition of an ample vocabulary and power of effective expression—second, some acquaintance with the literature. To attain the first, grammar and composition must be thoroly studied. Thruout the secondary-school course there should be much practice in writing along a variety of lines suggested by the pupil's experience, his general interests, and studies other than English. Spelling, punctuation, accuracy of idiom, should receive due attention in all written work; while correct and forceful oral expression should also be insisted upon.

To meet the requirement in literature certain selections are to be made from two lists of works—one for reading, the other for closer study. It is hoped to foster in this way a taste for good books and an intelligent appreciation of them. Committing to memory selected passages and reading aloud are strongly urged. In all cases some knowledge of the author's life and his place in literature should be acquired, while a more exacting study of selected

* For any or all of the subjects described below the requirements of the College Entrance Examination Board, upon which these specifications are largely based, will be accepted. A circular stating these requirements in detail and blank forms of application for examination may be obtained by sending ten cents in stamps to the College Entrance Examination Board, Post Office Sub-Station 84, New York City.

texts would lay emphasis on form and style, meaning of particular words and phrases, and the significance of allusions. The list of books prescribed for 1922-23 may be obtained from the nearest high-school principal.

ELEMENTARY GERMAN, 2 UNITS.—During the first year the work should consist of drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. During the second year the course should be a continuation of the first as regards grammar, composition and conversation. The reading should consist of at least 200 pages of such texts as Arnold's *Fritz auf Ferien*, Wildenbruch's *Das Edle Blut*, Mosher's *Willkommen in Deutschland* and Benedix' *Der Prozess*.

ELEMENTARY FRENCH, 2 UNITS.—The course in French should parallel that in German. During the first year there should be drill in pronunciation, the rudiments of grammar, writing from dictation, simple composition and conversation, and the reading of from 100 to 175 pages of easy prose and poetry. Thruout the second year the course should be a continuation of the first as regards grammar, composition, and conversation. At least 250 pages of such texts as Bruno's *Le Tour de la France*, Malot's *Sans Famille*, Mérimée's *Colomba*, Sarcey's *Le Siège de Paris*, and Hugo's *La Chute* should be read.

ELEMENTARY SPANISH, 2 UNITS.—The course in Spanish should parallel those of German and of French in regard to the nature, amount, and quality of the work accomplished in both years. The reading in the second year should consist of at least three hundred pages from such texts as Carrion y Vital Aza—*Zaraguata*; Gutierrez—*El Trovador*; Taboada—*Cuentos Alegres*; Alarcon—*El Capitan Veneno*; Galdos—*Electra*; Valdés—*La Hermano San Sulpicio*.

Mathematics

ALGEBRA, 1½ UNITS.—The requirement in algebra comprises the four fundamental operations; factoring; highest common factor and lowest common multiple; fractions; linear equations; exponents; radicals; quadratic equations; simultaneous equations involving quadratics; binomial theorem for positive integral exponents. Problems should be given at frequent intervals. Candidates for the courses in Agriculture and Home Economics are required to offer but one unit for this work.

PLANE GEOMETRY, 1 UNIT.—This requirement is met by the usual theorems and constructions of standard text-books, numerous originals, and applications.

SOLID GEOMETRY, ½ UNIT.—The ground is covered by the usual theorems and constructions of standard text-books, originals, and applications.

Science

PHYSICS, 1 UNIT.—This course should consist of class-room work based on a standard text-book, accompanied by lecture-table demonstrations and by

numerous practical problems. A parallel course in individual laboratory work is desirable, but is not absolutely required. In the case of laboratory work, one hour of credit will be allowed for each two hours spent in the laboratory.

CHEMISTRY, 1 UNIT.—An elementary text-book, such as William's Elements of Chemistry, or First Principles of Chemistry, by Brownlee and others, should be covered by recitations. At least one exercise per week must be devoted to individual work in the laboratory. The pupil must perform forty or more experiments, such as are described in the Report of the College Entrance Examination Board, 1919, and keep a notebook in which he describes the apparatus used, records the phenomena observed, and states the conclusions in his own words, in each experiment.

History

HISTORY, 1 UNIT.—The requirement in history will be met by presenting any one of the following subjects: ancient history, especially Greek and Roman, with the chief events of the early Middle Ages to the death of Charlemagne (814); medieval and modern European history from 814 to the present time; English history; American history and civil government.

GROUP B

From this group units are to be taken, in addition to those of Group A, sufficient to make up the whole number required. Any combination of units, including fractions not less than one-half, will be allowed.

Languages

GERMAN, 2 UNITS.—The requirement for Elementary German is indicated under Group A. One unit will also be allowed for third and one for fourth year work. Third-year study should emphasize reading and advanced composition. Suitable texts are Riehl's *Der Fluch der Schönheit*, Freytag's *Bilder aus der deutschen Vergangenheit*, Lessing's *Minna von Barnhelm*, Schiller's *Wilhelm Tell*, and Heine's *Die Harzreise*. The fourth year's work should mark a decided advance in the mastery of vocabulary and idioms shown both in speaking and writing. The works may be made the basis for themes. The following reading matter is suggested: Freytag's *Soll und Haben*, Fulda's *Der Talisman*, Hauff's *Lichtenstein*, Scheffel's *Eckehard*, Schiller's *Wallenstein*, *Maria Stuart*, or *Geschichte des dreissigjährigen Krieges* (Book III), Dahn's *Ein Kampf um Rom*, Goethe's *Dichtung und Wahrheit* (Books I-IV). At least 500 pages should be read.

FRENCH, 2 UNITS.—The requirement for Elementary French is indicated under Group A. One unit will also be allowed for third and one for fourth-year work. In third year emphasis should be laid on reading. Some time ought also to be given to advanced composition. Among suitable texts may

be mentioned Racine's *Athalie*, Corneille's *Le Cid*, Molière's *Le Bourgeois Gentilhomme*, Sandeau's *Mademoiselle de la Seiglière*, Vigny's *La Canne de Junc*. From the fourth year's study increased facility in conversation and composition should be gained, and any modern French, other than technical, should be read with ease. Such texts as the following are recommended: the prose works of Dumas père, Hugo's *Ruy Blas*, La Fontaine's *Fables*, Saint Beuve's *Essays*, Taine's *Origines de la France Contemporaine*, Pellissier's *Mouvement Littéraire au XIX^e Siècle*. From 600 to 1,000 pages should be read.

SPANISH, 2 UNITS.—The requirement for Elementary Spanish is indicated under Group A. One unit will also be allowed for third and one for fourth year work. Third year study should emphasize reading, advanced composition, free reproduction, both orally and in writing, of the texts read. The reading should consist of at least four hundred and fifty pages from such texts as Valdés's *La Alegria del Capitan Ribot*; Alarcon's *El Nino de la Bola*; Valera's *El Comendador Mendoza*; Breton de los Herreros's *Quién es Ella?*; Becquer's *Legends and Tales*; Sanz's *Don Francisco de Quevedo*; Caballero's *El Servilón y un Liberañito*; Gily Zarate's *Guzman el Bueno*.

The fourth year's work should show an increased facility in reading, composition, and conversation. The reading should consist of from six hundred to one thousand pages of such texts as Blasco-Ibanez's *la Barraca*; Nunez de Arce's *El Haz de Lena*; Tamayo y Baus's *Un Drama Nuevo*; Ayala's *Consuelo*; Avellaneda's *Baltasar*; Echegaray's *El Gran Galeoto*; Pereda's *Pedro Sanchez*; Valera's *Pepita Jiménez*; Pardo Bazan's *Pascual Lopez*.

LATIN, 1 TO 4 UNITS.—A credit of one unit will be given for each year's work in Latin, covering in all a standard beginner's book, four books of Cæsar's Gallic War, six orations of Cicero and six books of Virgil's *Æneid*. It is expected that work in prose composition and sight reading will be included in each subject.

Mathematics

SOLID GEOMETRY, $\frac{1}{2}$ UNIT.—See Group A for other than engineering students.

Science

BOTANY, 1 UNIT.—The preparation in Botany should include individual laboratory work recorded by notes and diagrammatic drawings. Field work is desirable, and should also be accompanied by notes. The year's course of study should consist of three parts, viz.: 1. The general principles of the anatomy, morphology, physiology, and ecology of seed plants. 2. The natural history of the plant groups. The structure, reproduction, and adaptations to habitat of one or two types from each group should be studied. 3. Classification. A brief study of the subdivisions of the above groups. Ability to determine species of flowering plants is not essential. Any standard text-book covering the above field may be used.

GEOLOGY, ½ UNIT.—In Geology, a study of the following subjects should be made: rock-forming minerals, their names and chemical constituents; earthquakes—their cause and effects; volcanoes—distribution, types, character of eruption, nature of erupted material; supposed physical state of the earth's interior; surface agencies destructive to rocks, with brief illustrations; processes of re-construction, with illustrations; rocks—classification, according to origin, rock fracture and dislocation, rock structure due to erosion, metamorphic rocks, mineral veins and their method of formation; conditions determining land sculpture; the geological periods, with land elevations, and the characteristics of climate, plant and animal life of each period.

PHYSIOGRAPHY, 1 UNIT.—This course should include a consideration of the earth as a globe, the atmosphere, the waters of the earth, the lands, life upon the earth, and the reactions between these elements. Special attention should be given to the questions of climate, the winds, the weather, tides, ocean currents, and to the effect of the ocean in modifying climatic conditions. Attention should be directed to the manner in which the land was originally formed and to the way in which the original formation has been and is being modified by the action of erosion, the winds, and frost. Thruout the course consideration should be given to the manner in which the various physical characteristics of the earth have affected life upon its surface.

PHYSIOLOGY, ½ UNIT.—The text-book work should cover material equivalent to that of Martin's Human Body or Hough and Sedgwick's Human Mechanism. In addition the applicant should present a notebook, showing laboratory work on the elementary physiological processes and general structure of mammals.

ZOÖLOGY, 1 UNIT.—The work should include: 1. The general natural history of a number of common vertebrates and invertebrates of the locality where the work is given. 2. The classification of these forms into phylum, class and order, with the characteristics of the several groups. 3. The main anatomical features of one vertebrate, two arthropods (one an insect); an annelid, preferably the earthworm, a coelenterate, two protozoans (*Amœba* and *Paramœcium* recommended). 4. The general physiology of the above types involving digestion, absorption, circulation, excretion, and nerve function. These should be compared with the same functions in the human body. 5. The following subjects should be brought before the student in connection with the foregoing studies: asexual and sexual reproduction, alternation of generations, regeneration, fertilization and segmentation of egg cells, adaptation, variations, evidences of relationship between similar groups, and the cell structure of animals.

Certified notebooks must be presented, which include notes upon work and discussion in class-room and drawings of the forms dissected.

History, 1 unit

See Group A.

Drawing

DRAWING, 1 UNIT.—This may be either freehand or mechanical. If freehand drawing is offered, the candidate should submit at least fifteen drawings, the majority to be in pencil, certified as his work by the instructor. These should show ability to sketch from various objects with considerable accuracy of proportion and clearness of line, and a fair understanding of the rules of perspective and light and shade as applied in freehand sketching. A candidate may also present the equivalent of five hours per week for one year in elementary mechanical drawing, lettering, or sketching from models.

Domestic Science

DOMESTIC SCIENCE, 1 UNIT.—In domestic science the student must present satisfactory evidence of knowledge in the following subjects: the use and care of the kitchen equipment, general cleaning processes, the marketable forms of staple foods. She must also show credit for at least twelve cooking laboratory lessons of two hours each.

Shop Practice

SHOP PRACTICE, $\frac{1}{2}$ UNIT.—The candidate may offer carpentry or any of the various forms of bench-work given in a well-equipped manual training school, equivalent to five hours per week for one-half year.

Farm Practice

FARM PRACTICE, $\frac{1}{2}$ UNIT.—By "farm practice" is meant familiarity with the operations of the farm, such as the harnessing of teams, the use of tillage implements, and the care of dairy animals.

I. THE DEGREE COURSES

Certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in mathematics, pure and applied; the English language as a means of intercommunication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses,

moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-winning, but also preparation for citizenship, and for moral and social life, have intertwined with the vocational work and study, previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools. They thus become an integral part of the school system of the State. Young men and young women, citizens of the State and having requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are agriculture, engineering, applied science, home economics, and vocational education courses in agriculture and home economics, all leading to the degree of Bachelor of Science; a two-year course (based on a recognized two-year normal school course) leads to the degree of Bachelor of Education.

The Agricultural Course

(Including Agricultural Education Courses)

The agricultural course is intended to give thoro preparation for taking charge of and operating a piece of landed property; also by the introduction of education courses, to fit the students for positions as teachers of vocational agriculture in the high schools established under the provisions of the Smith-Hughes act, college teachers of agriculture, and extension workers. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thoro study of the sciences bearing directly on such work, viz.: botany, chemistry, geology, zoölogy, anatomy, physics, bacteriology and entomology, with courses in educational psychology, history of education, and special methods in agricultural teaching. In addition it embraces the culture and mental discipline arising from the study of mathematics, drawing, English literature, composition and rhetoric, modern languages, history, economics. The course is planned to

give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first and second years; in the second half of the junior year, in addition to the required work for all students in the course, two optional lines of work are offered, one of which must be selected by the student and followed until graduation. The two lines offered are horticulture and animal husbandry. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. All candidates for a degree in the agricultural course are required to spend at least six months in practical farm work before the degree is granted. Students in the agricultural course who elect courses in education and practice teaching as required in the State plan for vocational education qualify for teachers' certificates and for employment as teachers of agriculture in public high schools. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition.	3	English I—Rhetoric and Composition.	3
Math. III—Algebra, 4 recitations....	2½	Chemistry II—General Chem. and Qualitative Analysis	3[1½]
Math. II—Trigonometry, 4 recitations	2½	Botany I—General	1[2]
Chemistry I—General.....	2[1½]	An. Hus. I—Stock Judging.....	[2]
Botany I—General	1[2]	An. Husb. III—Breeds.....	2
Hort. I—Propagation of Plants.....	1[1]	Hort. II—Vegetable Gardening.....	2
Art II—Pencil Drawing.....	[1]	Hort. IV—Spraying and Pruning.....	1[1]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics II—Theory.....	1	Mil. Sci. and Tactics II—Theory.....	1
Physical Training	[1]	Physical Training.....	[1]

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III—Mod. European	3	English III—Argumentation.....	}
Chemistry IVb—Organic Chemistry....	3[1]	or	
Botany II—Botany of Crops and Weeds	1[2]	History II—Civics	2
Zoology X—Vertebrate Zoology.....	2[2]	Chemistry XIV—Agricultural Chem-istry	4
Civil Engineering I—Surveying.....	1[2]	Physics I—Descriptive Physics.....	5
Mil. Sci. and Tactics I—Drill.....	[1]	Botany III—Trees and Shrubs.....	[1]
Mil. Sci. and Tactics IV—Theory.....	1	Zoology X—Vertebrate Zoology.....	2[2]
Physical Training.....	[1]	Geology I	2
		Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics IV—Theory.....	1
		Physical Training.....	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IX—Current Events.....	3[1½]	Agron. IV—Farm Crops.....	3[1]
or		Agron. VII—Farm Management.....	2
English XIII—Newspaper Writing....		Psy. and Edu. III—School Law.....	3
Hort. III—Fruit Culture.....		History I—Industrial History.....	3
Agron. III—Soils and Fertilizers.....		or	
An. Husb. XIIa—Poultry Culture.....	1	Mil. Sci. and Tactics V—Theory.....	[1]
Psy. and Ed. IV—Educational Psy- chology.....	3	Mil. Sci. and Tactics I—Drill.....	
English IV—Modern Essays.....	3	Physical Training.....	[1]
or		Choose Option A or B.	
Mil. Sci. and Tactics V—Theory.....		A. <i>Horticulture.</i>	
Mil. Sci. and Tactics I.....	[1]	Botany IV—Forestry.....	[2]
Physical Training.....	[1]	or	
Elect one.		Hort. XVII—Small Fruits.....	2[1]
Hort. XVI—Landscape Gardening.....	1[2]	Elective.....	4 or 5
An. Husb. X—Vet. Practice.....	3	B. <i>Animal Husbandry.</i>	
		An. Husb. VII—Dairy Practice.....	1[2]
		Elective.....	4

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Agronomy X—Agricultural Experimen- tation.....	3
An. Husb. VI—Feeds and Feeding....	3	Agronomy XIII—Marketing Farm Products.....	3
Psy. and Ed. II—History and Prin- ciples of Education.....	3	Voc. Ed. IV—Special Method in Teach- ing Agriculture.....	3
Agronomy XI—Plant Breeding.....	3	Mil. Sci. and Tactics VI—Theory....	3
Mil. Sci. and Tactics VI—Theory....	3	or	
Elective.....		Elective.....	
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training.....	[1]	Physical Training.....	[1]
Choose Option A or B.		Choose Option A or B.	
A. <i>Horticulture.</i>		A. <i>Horticulture.</i>	
Hort. X—Pomology.....	1[2]	Botany IV—Forestry.....	[2]
Elective.....	3	or	
B. <i>Animal Husbandry.</i>		Hort. XVII—Small Fruits.....	2[1]
Elective.....	6	Elective.....	3 or 4
Voc. Ed. II—Practice Teaching.....	3†	B. <i>Animal Husbandry.</i>	
		An. Husb. IV—Breeding.....	3
		Elective.....	3
		Voc. Ed. II—Practice Teaching.....	3†

†Practice Teaching to be taken either first or second term by arrangement with instructor in charge.

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Engineering Course

The engineering course has the same duration and the same general plan as that usually offered in the standard technical colleges. Students will follow the course as laid down until the sophomore year, at which time they must elect one of the four optional lines offered, viz.: mechanical, electrical, civil, and chemical engineering. Any line of work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and

efficient work in the great manufacturing and commercial industries of the State; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this, as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. The tabulated course follows:

Freshman Year

For the first year the course is the same for all students of engineering.

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
Math. I—Algebra, 4 recitations.....	2½	Math. VIIa—Analytics	5
Math. II—Trigonometry, 4 recitations..	2½	Chemistry II—General Chemistry and Qualitative Analysis	3[1½]
Chemistry I—General	2[1½]	Mech. Eng. V—Descriptive Geometry..	1[2]
Mech. Eng. I—Mechanical Drawing...	[4]	Mech. Eng. III—Pattern Making....	[2]
Mech. Eng. II—Forge and Foundry...	[2]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics II—Theory.....	1
Mil. Sci. and Tactics II—Theory.....	1	Physical Training	[1]
Physical Training	[1]		

MECHANICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III—Mod. European.....	3	English III—Argumentation	2
Physics II—General	4	or	
Physics III—Laboratory	[1½]	History II—Civics	4
Math. X—Calculus.....	5	Physics II—General	
Mech. Eng. VIa—Mechanical Drawing..	[2]	Physics III—Laboratory	[1½]
Civil Eng. I—Surveying.....	1[2]	Math. XI—Calculus	5
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. VIb—Mechanical Drawing..	[2]
Mil. Sci. and Tactics IV—Theory.....	1	Mech. Eng. XII—Mechanism.....	3
Physical Training	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics IV—Theory.....	1
		Physical Training	[1]

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V—Theory.....	1	Mil. Sci. and Tactics V—Theory.....	3
English IX—Current Events.....		Mech. Eng. IXb—Heat Engineering..	
or		Mech. Eng. Xb—Applied Mechanics..	1½
English XIII—Newspaper Writing...		Mech. Eng. XI—Hydraulics.....	3½
Mech. Eng. VIII—Machine Drafting..	[3]	Mech. Eng. XIII—Valve Gears.....	3
Mech. Eng. IXa—Heat Engineering..	3	Mech. Eng. XIV—Machine Shop.....	[3]
Mech. Eng. Xa—Applied Mechanics..	5	Mech. Eng. XVI—Experimental Engi-	[2]
Mech. Eng. XIV—Machine Shop.....	[3]	neering b	
Mech. Eng. XV—Experimental Engi-	1[1]	Mil. Sci. and Tactics I—Drill.....	[1]
neering a		Physical Training	[1]
Mil. Sci. and Tactics I—Drill.....	[1]		
Physical Training	[1]		

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Mech. Eng. XVIII—Experimental Engineering d.....	[2]
Mech. Eng. XVII—Experimental Engineering c.....	2[1½]	Mech. Eng. XIX—Heating and Ventilation.....	1
Mech. Eng. XX—Machine Design.....	[3]	Mech. Eng. XX—Machine Design.....	[3]
Mech. Eng. XXI—Power Plants and Design.....	2[1]	Mech. Eng. XXII—Assigned Work... or.....	3
Mech. Eng. XXII—Assigned Work... or.....	3	Mil. Sci. and Tactics VI—Theory....	
Mil. Sci. and Tactics VI—Theory....		Mech. Eng. XXIII—Dynamics of Machines.....	2
Elec. Eng. I—Theory of Direct Currents.....	3	Mech. Eng. XXVI—Business Organization and Management.....	3
Mil. Sci. and Tactics I—Drill.....	[1]	Elec. Eng. IV—Theory of Alternating Currents.....	2
Physical Training.....	[1]	Elec. Eng. II—Direct Current Laboratory.....	[3]
		Mil. Sci. and Tactics I—Drill.....	[1]
		Physical Training.....	[1]

ELECTRICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III—Mod. European.....	3	English III—Argumentation..... or.....	2
Physics II—General.....	4	History II—Civics.....	
Physics III—Laboratory.....	[1½]	Physics II—General.....	4
Math. X—Calculus.....	5	Physics III—Laboratory.....	[1½]
Mech. Eng. VIa—Mechanical Drawing	[2]	Math. XI—Calculus.....	5
Civ. Eng. I—Surveying.....	1[2]	Mech. Eng. VIB—Mechanical Drawing.	[2]
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. XII—Mechanism.....	3
Mil. Sci. and Tactics IV—Theory....	1	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training.....	[1]	Mil. Sci. and Tactics IV—Theory....	1
		Physical Training.....	[1]

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays..... or.....	3	History I—Industrial History..... or.....	3
Mil. Sci. and Tactics V—Theory....		Mil. Sci. and Tactics V—Theory....	
English IX—Current Events..... or.....	1	Elec. Eng. II—Direct Current Lab....	[3]
English XIII—Newspaper Writing....		Elec. Eng. IV—Theory of Alternating Currents.....	2
Elec. Eng. I—Theory of Direct Currents.....	3	Mech. Eng. IXb—Heat Engineering...	3
Mech. Eng. VII—Machine Shop.....	[3]	Mech. Eng. Xb—App. Mechanics.....	1½
Mech. Eng. IXa—Heat Engineering...	3	Mech. Eng. XI—Hydraulics.....	3½
Mech. Eng. Xa—App. Mechanics.....	5	Mech. Eng. XVI—Exp. Engineering b.	[2]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training.....	[1]	Physical Training.....	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Elec. Eng. V—Theory of Alternating Currents.....	3
Elec. Eng. V—Theory of Alternating Currents.....	3	Elec. Eng. VI—Alt. Current Lab....	[3]
Elec. Eng. VI—Alt. Current Laboratory.....	[3]	Elec. Eng. VII—Design of Electrical Machinery.....	[3]
Physics V—Electrical Meas.....	[1½]	Elec. Eng. VIII—Telephone Engineering.....	1
Physics VI—Prin. of Illumin. or.....	1[1½]	Elec. Eng. X—Electric Power Transmission.....	4
Mil. Sci. and Tactics VI—Theory....	[3]	Elec. Eng. XI—Electric Railways.....	2
Mech. Eng. XVII—Experimental Engineering c.....	2[1½]	Elec. Eng. XII—Assigned Work... or.....	3
Mech. Eng. XXI—Power Plants.....	2	Mil. Sci. and Tactics VI—Theory....	
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training.....	[1]	Physical Training.....	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

CIVIL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III—Mod. European	3	English III—Argumentation.....	2
Physics II—General.....	4	or	
Physics III—Laboratory.....	[1½]	History II—Civics	4
Math. X—Calculus.....	5	Physics II—General.....	
Civ. Eng. I—Surveying.....	1[2]	Physics III—Laboratory.....	[1½]
Mech. Eng. VIa—Mechanical Drawing	[2]	Math. XI—Calculus completed.....	5
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. VIb—Mechanical Drawing..	[2]
Mil. Sci. and Tactics IV—Theory.....	1	Mech. Eng. VII—Machine Shop.....	[1½]
Physical Training.....	[1]	Civil Eng. II—Topographic Surveying..	1[2]
		Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics IV—Theory.....	1
		Physical Training	[1]

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V—Theory.....	1	Mil. Sci. and Tactics V—Theory....	3
English IX—Current Events or Eng- lish XIII—Newspaper Writing.....		Civil Eng. III—Railroad Engineering..	
Civil Eng. III—Railroad Engineering.....	2[3]	Civil Eng. V—Roads and Pavements....	3[1]
Civil Eng. IV—Graphic Statics.....	2	Mech. Eng. Xb—App. Mechanics.....	1½
Mech. Eng. Xa—Applied Mechanics..	5	Mech. Eng. XI—Hydraulics.....	3½
Mech. Eng. IXa—Heat Engineering..	3	Mech. Eng. XVI—Experimental Engi- neering b	[2]
Mil. Sci. and Tactics I—Drill.....	[1]	Geology I	2
Physical Training	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
		Physical Training	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	Civil Eng. VIII—Bridge Design.....	[3]
Mech. Eng. XVII—Experimental En- gineering c	2[1½]	Civil Eng. IX—Masonry.....	2[1]
Civil Eng. VI—Bridge Details.....	[2]	Civil Eng. X—Reinforced Concrete....	2
Civil Eng. VII—Bridge Analysis.....	2	Civil Eng. XII—Water Supply.....	3
Civil Eng. XI—Sewerage.....	2	Civil Eng. XIV—Contracts and Speci- fications	2
Elec. Eng. I—Theory of Direct Cur- rents	3	Elec. Eng. IV—Theory of Alternating Currents	2
Civil Eng. XV—Assigned Work.....	3	Civil Eng. XV—Assigned Work.....	3
or		or	
Mil. Sci. and Tactics VI.....	[1]	Mil. Sci. and Tactics VI.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training	[1]	Physical Training	[1]

CHEMICAL ENGINEERING

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III—Mod. European.....	3	English III—Argumentation.....	2
Physics II—General.....	4	or	
Physics III—Laboratory.....	[1½]	History II—Civics	4
Math. X—Calculus.....	5	Physics II—General.....	
Chemistry III—Qualitative Analysis..	[3]	Physics III—Laboratory.....	[1½]
Mech. Eng. VIa—Mechanical Drawing	[2]	Math. XI—Calculus	5
Mil. Sci. and Tactics I—Drill.....	[1]	Mech. Eng. XII—Mechanism.....	3
Mil. Sci. and Tactics IV—Theory.....	1	Chem. XXIII	[2]
Physical Training	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
		Mil. Sci. and Tactics IV—Theory.....	1
		Physical Training	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or Mil. Sci. and Tactics V—Theory....		or Mil. Sci. and Tactics V—Theory....	
English IX—Current Events.....	1	Mech. Eng. Xb—App. Mechanics....	1 $\frac{2}{3}$
or English XIII—Newspaper Writing....		Mech. Eng. XI—Hydraulics.....	
Mech. Eng. Xa—Applied Mechanics..	5	Chemistry VIII—Quantitative Analysis	3 $\frac{1}{3}$
Chemistry VII—Quantitative Analysis.		Chemistry XII—Physical Chemistry..	
Chemistry XVIa—Industrial Chem-	[3]	alternating with	4
istry		Chemistry V—Organic Chemistry....	
Chemistry IVa—Organic Chemistry...	3	Chemistry VI—Organic Chemistry....	[3]
Mil. Sci. and Tactics I—Drill.....		Mil. Sci. and Tactics I—Drill.....	
Physical Training	[1]	Physical Training	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics	3	Chem. XII—Physical Chemistry....	4
Elec. Eng. I—Theory of Direct Cur-	3	or Chem. V—Organic Chemistry.....	
rents		Chem. XX—Assigned Work.....	[3]
Mech. Eng. IXa—Heat Engineering...	[3]	or Mil. Sci. and Tactics VI—Theory..	
Chem. XVII—Industrial Chemistry...		Chem. XXI—Reports and Discussions.	2
Chem. XVIIb—Industrial Chemistry...	3	Mech. Eng. IXb—Heat Engineering..	
Chem. XX—Assigned Work.....		Mech. Eng. XXVI—Business Organiza-	1 $\frac{1}{2}$
or Mil. Sci. and Tactics VI—Theory....	[3]	tion and Management	
Mil. Sci. and Tactics I—Drill.....		Chem. XVII—Industrial Chemistry...	3
Physical Training	[1]	Chem. XXII—Organic or Physical	
		Chemistry	[2]
		Mil. Sci. and Tactics I—Drill.....	[1]
		Physical Training	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Course in Applied Science

This course offers to the student opportunity to prepare either for teaching or for any one of several other distinct vocational pursuits, such as the application of botany, zoölogy, chemistry, and bacteriology to practical industrial problems. In these subjects, as well as in agriculture, the Vocational Science Course makes specialization possible. In addition, the course is so constructed that the student, although specializing, may come in touch with subjects that possess wider cultural significance and insure that broader outlook upon life which should characterize the educated man.

The general plan of the course is to give, primarily, a foundation in the sciences of chemistry, physics, and biology; also to give the student an acquaintance with history and literature and an efficient command of good English. The course offers, at the beginning of the Junior year, options in Agriculture, Biology, and Chemistry. One of these the student must select in addition to certain studies

required of all. Opportunity either for further specialization within the option, or for gaining a broader training in unrelated studies is afforded thru a limited number of elective subjects. The electives may be in whole or in part in education in preparation for certification as teacher of science in general high school or of related science in vocational schools.

The nature and aim of these several options are as follows:

THE AGRICULTURAL OPTION

This option combines the broad scientific training of the Applied Science Course with the fundamental subjects given in the Agricultural Course. It thus affords a basis for investigational work in subjects related to agriculture.

With the introduction of agriculture into the secondary and grade schools, there was created a demand for teachers and superintendents who had received, in addition to work in the sciences and education, training in the broad field of agriculture. This option therefore furnishes preparation in those fundamental subjects in Agronomy, Animal Husbandry, and Horticulture which will enable the graduates from this course acceptably to fill positions as instructors and principals of agricultural high schools or as superintendents of schools in rural communities.

THE BIOLOGICAL OPTION

The Biological Option offers training in the applications of biological science to the problems of modern life. The great growth of agricultural investigation in recent years has created a demand for trained workers in applied biology. In the state experiment stations and the federal government bureaus, opportunities are offered for the investigation of problems in plant physiology and pathology, economic entomology, animal nutrition and animal pathology. State and federal inspection of plants and animals, and the problems of the control of plant and animal diseases offer further opportunities for workers trained in biological subjects. The scope of public hygiene and sanitation is increasing each year and has created a growing demand for trained workers in federal, state, and municipal health service. In addition, such students are well equipped to undertake graduate work in other institutions, or to begin the study of medicine.

THE CHEMICAL OPTION

The subjects in Chemistry are designed to train the student in theoretical and descriptive inorganic and organic chemistry; to give him a working knowledge of the various branches of chemical analysis; and to familiarize him with the practical applications of chemistry. The course is well adapted to prepare students for teaching, for experiment-station work, for graduate work in chemistry, or for positions in industries which involve chemical processes. Such industries include the bleaching and dyeing of cotton, silk and wool, the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, paper, soap, paint and varnish, the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion or by destructive distillation to form gas, coke and tar, embracing the entire field of forest-products industries. In addition the course is intended to prepare particularly for the more specialized chemical industries such as the manufacture of chemicals and the manufacture and application of dyestuffs.

Freshman Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
German or French.....	3	German or French.....	3
Math. I—Algebra, 4 recitations.....	2½	Math. VIIIb—.....	4
Math. II—Trigonometry, 4 recitations.....	2½	Chemistry II—General Chemistry and Qualitative Analysis.....	3[1½]
Chemistry I—General.....	2[1½]	Botany I—General.....	1[2]
Botany I—General.....	1[2]	Mil. Sci. and Tactics II—Theory.....	1
Art II—Pencil Drawing.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Mil. Sci. and Tactics II—Theory.....	1	Physical Training.....	[1]
or			
Home Economics III—Hygiene.....			
Mil. Sci. and Tactics I—Drill.....	[1]		
Physical Training.....	[1]		

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
History III—Mod. European.....	3	English III—Argumentation.....	2
Chemistry IVb—Organic.....	3[1]	or	
or		History II—Civics.....	
Chemistry III—Qualitative Analysis..	[3]	French or German.....	3
French or German.....	3	Chemistry XXIII or Elective.....	[2]
Zoology X—General.....	2[2]	Geology I.....	2
Botany II.....	1[2]	Zoology X—Anatomy and Physiology..	2[2]
Mil. Sci. and Tactics IV—Theory.....	1	Physics I—Descriptive.....	5
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics IV—Theory.....	1
Physical Training.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
		Physical Training.....	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
or		or	
Mil. Sci. and Tactics V—Theory....	1	Mil. Sci. and Tactics V—Theory....	3
English IX—Current Events.....	1	Psy. and Ed. III—Rhode Island Edu- cation.....	3
or		Mil. Sci. and Tactics I—Drill.....	[1]
English XIII—Newspaper Writing..	3	Physical Training.....	[1]
Psy. and Ed. IV—General Psychology.	[1]	Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:	
Mil. Sci. and Tactics I—Drill.....	[1]	<i>A. Agriculture</i>	
Physical Training.....	[1]	Agronomy IV—Farm Crops.....	3[1]
Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:		Zoology IV—Economic Entomology...	3[1]
<i>A. Agriculture</i>		Botany IV—Forestry.....	[2]
Agronomy III—Soils.....	3[1½]	alternating with	
Horticulture I—Propagation of Plants.	1[1]	Horticulture IV—Spraying and Prun- ing.....	1[1]
Elective.....	3	Elective.....	3
<i>B. Biology</i>		<i>B. Biology</i>	
Zoology VIIa—Histology.....	3	Zoology VIIIb—Embryology.....	2[1]
or		or	
Agronomy XI—Plant Breeding.....	1[4]	Zoology II—Limnology.....	1[½]
Botany V—Plant Histology.....	3	Botany VI—Plant Pathology.....	1[4]
Elective.....	3	Zoology I—Invertebrate Zoology....	1[3]
<i>C. Chemistry.</i>		or	
Chemistry VII—Quantitative Analysis.	[3]	Chem. XIX—Physiological Chem....	4
Chemistry IVa—Organic.....	3[1]	Elective.....	3
Chemistry XVIa—Industrial Chemistry	3	<i>C. Chemistry.</i>	
		Chemistry VIII—Quantitative Analysis	[5]
		Chemistry VI—Organic Laboratory....	[3]
		Chemistry XII—Physical Chemistry..	4
		alternating with	
		Chemistry V—Advanced Organic....	

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics.....	3	English V—Shakespeare.....	3
Psy. and Ed. II—Prin. of Education...	3	Psy. and Ed. I—History of Educa- tion.....	3
Mil. Sci. and Tactics VI—Theory....	3	Mil. Sci. and Tactics VI—Theory....	3
or		or	
Elective.....	[1]	Elective.....	[1]
Mil. Sci. and Tactics I—Drill.....	[1]	Mil. Sci. and Tactics I—Drill.....	[1]
Physical Training.....	[1]	Physical Training.....	[1]
Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:		Options: A, B or C. All of the sub- jects in one of the following groups must be chosen:	
<i>A. Agriculture.</i>		<i>A. Agriculture.</i>	
An. Hus. XIV—Poultry.....	[2]	Agronomy XIII—Marketing.....	3
Horticulture XVI—Landscape Garden- ing.....	1[2]	Horticulture II—Vegetable Gardening.	2
An. Husb. VI—Feeding.....	3	Animal Husbandry IV—Breeding....	3
<i>B. Biology.</i>		<i>B. Biology.</i>	
Agronomy XI—Plant Breeding.....	3	Chemistry XIX—Physiological Chem- istry.....	4
or		or	
Zoology VIIa—Histology.....	[3]	Zoology I—Invertebrate Zoology....	1[3]
Assigned Biological Work.....	3	Assigned Biological Work.....	3
<i>C. Chemistry.</i>		Zoology II—Limnology.....	1[½]
Chemistry XVII—Industrial Chem- istry.....	[3]	or	
Chem. XVIb—Industrial Chemistry...	3	Zoology VIIIb—Embryology.....	1[2]
Chemistry XX—Assigned Work.....	[3]	<i>C. Chemistry.</i>	
		Chemistry V—Advanced Organic....	4
		alternating with	
		Chemistry XII—Physical Chemistry..	[3]
		Chemistry XVII—Industrial Chem- istry.....	[3]
		Chemistry XXI—Reports and Discus- sions.....	2
		Chemistry XXII—Organic or Physical Chemistry.....	[2]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Course in Home Economics

The object of the home economics course is to fit young women for home making and to provide adequate training for teaching the various household arts. Nowhere is the application of modern science to everyday life more important than in the home. In no other life-work do women find greater need of scientific knowledge and technical skill than in the intelligent and economic administration of household affairs.

The course includes instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene; and instruction in the care of infants and young children. During the entire course instruction is given in hand sewing, machine practice, and in drafting, cutting, and making garments. Attention is given to planning the wardrobe and remodeling garments. Altho the main work is scientific and technical, the importance of artistic and literary training for home life has not been neglected. It is recognized that all the knowledge of right living is needed to assist the student to a broader conception of citizenship as well as in performing the manifold duties of daily life.

Opportunities are greater and more varied today for women trained in home economics than for those trained in any other one line. Besides teaching, a profession which is chosen by many, there are excellent openings in institutional management, lunch-room and tea-room work, which vary according to the type of institution selected. The demand for hospital dietitians is greater than can be met. There is also a growing demand on the part of the industries for trained women scientists. In view of this demand opportunity to take special courses in chemistry and bacteriology will be offered during the junior and senior years to approved students who wish to fit themselves for such work. Such preparation will qualify the student along the following lines: special research work on problems involving chemistry or bacteriology as applied to food analysis, federal and municipal inspection, analytical work in experiment stations and technical laboratories, and chemistry as applied to textile analysis.

Regular students are expected to take the course as outlined below,

with choice of electives; but when entered in other courses in the college they may elect certain work in the home economics department, under direction of the head of the department. Electives in education and practice teaching prepare for State certification as teachers for high schools and other vocational schools. The tabulated course follows:

Freshman Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English I—Rhetoric and Composition..	3	English I—Rhetoric and Composition..	3
Chemistry I—General Chemistry.....	2[1½]	Chemistry II—General Chemistry and Qualitative Analysis	3[1½]
Botany I—General	1[2]	Botany I—General	1[2]
Home Economics III—Hygiene.....	1	Art XII—Drawing and Design.....	[3]
Home Economics I—Garment Making	1[2½]	Home Economics I—Garment Making	1[2½]
Physical Training	[1]	Physical Training	[1]
Options: A or B. Both subjects in one of the following groups must be chosen:		<i>Electives.</i>	
A.		Music VI—Appreciation and History of Music	2
Math. III—Algebra, 4 recitations.....	2½		
Math. II—Trigonometry, 4 recitations.	2½		
B.			
English VI—Literature and Composition	2		
Music V—Appreciation and History of Music	2		

† Electives in this term are to be taken only by those students having advance credit.

Sophomore Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English XV—Advanced Composition..	1	English II—Survey of English Literature	3
Modern Language	3	Modern Language	3
Chemistry IVb—Organic	3[1]	Physics I—Descriptive	5
History III—Modern European History	3	Zoology Xb—Physiology and Anatomy	2[2]
Zoology Xa—General	2[2]	Home Economics IVb—Foods.....	[3]
Home Economics IVa—Foods.....	[3]	Home Economics XXVII—Applied Household Mechanics	1[1]
Home Economics XVIIIa—Dressmaking	[2]	Physical Training	[1]
Physical Training	[1]		

Another elective may be substituted if the schedule permits.

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
Psy. and Ed. IV—General Psychology.	3	Chemistry X—Food Analysis.....	4
Home Economics VIII—Dietetics.....	2[1]	alternating with	
Home Economics VII—House Planning and Sanitation	3[1]	Chemistry XIX—Physiological Chem. }	
Art VIII—Architectural Drawing and Interior Decoration	[2]	Art XI—Costume Design.....	[2]
Physical Training	[1]	Home Economics XVIII—Dressmaking	[2]
Elective	3	Home Economics IX—Home Economics	3
Bacteriology I—General	1[3]	Home Economics XII—Home Nursing.	1[1]
<i>Electives.</i>		Physical Training	[1]
Zoology VIIla—Histology	3	Elective	7
English XIII—Newspaper Writing.....	1	<i>Electives.</i>	
English IX—Current Events.....	1	English VIII—Interpretive Reading..	1
or		English III—Argumentation	2
English XIII—Newspaper Writing..]		or	
		History II—Civics	
		Zoology VIIlb—Embryology	3
		Home Economics XXVIII—Catering..	3
		or	
		Home Economics XXIX—Lunch Room Cooking	3

Other electives may be substituted for the above if the schedule permits.

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Senior Year

FIRST TERM		CREDITS*	SECOND TERM		CREDITS*
Economics I—Economics		3	English V—Shakespeare		3
English XIV—Nineteenth Century			Chemistry X—Food Analysis		
Poetry		2	alternating with		
Art III—History of Art		3	Chemistry XIX—Physiological Chem- istry		4
Home Economics XXVI—Textiles and Clothing Economics	[2]		Psy. and Ed. I—History of Education		3
Home Economics XXI—Home Admin- istration	[3]		Home Economics VIIIb—Dietetics and Child Care		2[1]
Physical Training	[1]		Home Economics XXV—Costume Design		[3]
Elective	6		Physical Training		[1]
<i>Electives.</i>			Electives		[3]
Bacteriology II—Advanced	[4]		<i>Electives.</i>		
Vocational Education V—Teaching			Bacteriology II—Advanced		[4]
Home Economics	1[1]		Vocational Education V—Teaching		
			Home Economics		1[1]

Other electives may be substituted if the schedule permits.

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

The Education Courses

The requirement for entrance to the courses leading to the degree of Bachelor of Education is graduation from an approved normal school which requires at least two years of professional and academic study and the entrance requirements of which are equal to those of this college.

By arrangement with Rhode Island College of Education, graduates of that institution will be enrolled in this course upon the recommendation of the principal. The course is of two years' duration and offers three optional lines of work, viz.: Agriculture, Home Economics and Science. The work is so arranged as to give in the shortest time possible training in the fundamental sciences, together with a comparatively large amount of professional work in the option chosen.

The Agricultural option offers an excellent opportunity to graduates of theological courses and teachers who are planning to take up work in rural communities to broaden their education in such a way as to enable them more completely to understand the problems of those with whom they intend to work.

The Science option gives a comprehensive foundation in Mathematics, Chemistry, Botany, Zoölogy, Physics and Bacteriology, and also gives an opportunity to specialize to some extent in one of these.

Those who take this course will be prepared to teach science in the schools of the State.

The Home Economics option offers the fundamental subjects in household arts and the closely allied sciences which will prepare the student to teach these subjects in the schools of Rhode Island. The course listed below will be given so far as the schedule will permit.

AGRICULTURE

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Math. III—Algebra, 4 recitations.....	2½	Chemistry II—General Chemistry and Qualitative Analysis	3[1½]
Math. II—Trigonometry, 4 recitations.....	2½	Botany I—General	1[2]
Chemistry I—General	2[1½]	Animal Husbandry I—Stock Judging..	[2]
Botany I—General	1[2]	Animal Husbandry III—Breeds.....	2
Botany III—Trees and Shrubs.....	[1]	Horticulture II—Vegetable Gardening.	2
Agronomy II—Forage Crops.....	2	Horticulture IV—Spraying and Pruning	1[1]
Animal Husbandry XIIa—Poultry.....	1	Botany III—Trees and Shrubs.....	[1]
Horticulture XVI—Landscape	1[2]	Geology I	2
Physical Training	[1]	Physical Training	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Chemistry IVa—Organic.....	3[1]	Chemistry XIV—Agricultural Chem-istry	4
Botany II—Crops and Weeds.....	1[2]	Physics I—Descriptive Physics.....	5
Zoology X—General Zoology.....	2[2]	Zoology X—Anatomy and Physiology..	2[2]
Animal Husbandry VI—Feeds and Feeding	3	Agronomy IV—Farm Crops.....	3[1]
Agronomy III—Soils and Fertilizers...	3[1½]	Horticulture XVII—Small Fruits....}	2[1]
Horticulture III—Fruit Culture.....	3	or	
Physical Training	[1]	Botany IV—Forestry	
		Physical Training	[1]

SCIENCE

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Math. I—Algebra, 4 recitations.....	2½	Mathematics VIIla—Analytics.....	5
Math. II—Trigonometry, 4 recitations.....	2½	or	
Chemistry I—General	2[1½]	Mathematics VIIlb—Analysis	4
Botany I—General	1[2]	Chemistry II—General Chemistry and Qualitative Analysis	3[1½]
Zoology X—General Zoology.....	2[2]	Botany I—General	1[2]
Modern Language	3	Zoology X—Anatomy and Physiology..	2[2]
Physical Training	[1]	Geology I	2
		Modern Language	3
		Physical Training	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Physics II—General	4	Physics II—General	4
Physics III—Laboratory	1[½]	Physics III—Laboratory	1[½]
Chemistry IVa—Organic	3[1]	Zoology I—Invertebrate Morphology..	1[3]
or		Botany III—Trees and Shrubs.....	[1]
Chemistry III—Qualitative	[3]	Physical Training	[1]
Botany III—Trees and Shrubs.....	[1]	Elective	9
Bacteriology I—General Systematic...	1[3]		
Physical Training	[1]		
Elective	6		

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

HOME ECONOMICS

Junior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Chemistry I—General	2[1½]	Botany I—General	1[2]
Zoology Xa—General	2[2]	Chemistry II—General Chemistry and Qualitative Analysis	3[1½]
Botany I—General Botany	1[2]	Zoology Xb—Physiology and Anatomy	2[2]
Home Economics I—Garment Making	1[2½]	Art XII	[3]
Home Economics IVa—Foods	[3]	Home Economics I—Garment Making	1[2½]
History III—Modern European	3	Home Economics IVb—Foods	[3]
Physical Training	[1]	Home Economics XXVII — Applied Household Mechanics	1[1]
		Physical Training	[1]

Senior Year

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I	3	Vocational Ed. Vb—Teaching Home Economics	1[1]
Vocational Ed. Va—Teaching Home Economics	1[1]	Home Economics XII—Home Nursing	1[1]
Home Economics VIIa—Dietetics	2[1]	Home Economics XVIIIb—Dressmaking	[2]
Home Economics VII—House Planning and Sanitation	3[1]	Home Economics IX—Home Economics	3
Home Economics XVIIIa—Dressmaking	[2]	Zoology VIIIb—Embryology	3
Chemistry IVa—Organic	3[1]	Physical Training	[1]
Bacteriology I—General Systematic	1[3]	Elective	7
Physical Training	[1]		

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Teacher Training Courses in Vocational Education

A law passed by the sixty-fourth Congress and signed by the President, February 23, 1917, provides for coöperation between the Federal Government and the several States in the advancement of vocational education in the fields of agriculture, home economics, and trades and industries. In order to receive the benefits of this law, which is known as the Vocational Education Act, it is necessary that the State shall, through the legislative authority thereof, accept the provisions of the Act and create or designate a State Board for Vocational Education, which shall have charge of the administration of this Act. Under the supervision of the State Board, there shall be established vocational courses of less than collegiate grade for persons over fourteen years of age who have entered or are preparing to enter upon the line of vocational work in which they desire to receive instruction.

The Act also establishes a fund which shall be used for training of teachers, supervisors and directors of the vocational work. In order to carry out the provisions of the Act in so far as the training of

teachers in agriculture and home economics and teachers of related subjects in trades and industries is concerned, an agreement has been entered into between the State Board for Vocational Education and the Board of Managers of the Rhode Island State College, whereby teacher training courses for agriculture, home economics and related subjects in trades and industries shall be given at the college.

The courses as outlined are of four years' duration, and upon completion the graduates therefrom receive the Bachelor of Science degree. Requirements for entrance to these courses are the same as to the other four-year degree courses. (See pp. 33-40.)

According to a ruling of the Federal Board for Vocational Education, and the requirements of the State plan for training teachers, it will be necessary for all candidates for positions as teachers, supervisors or directors of vocational work to have had a certain amount of practical experience in the line of work in which a position is sought before such position can be obtained.

Agriculture

See pages 24 and 25.

Teacher Training Course in Home Economics

Freshman Year

Same as Home Economics Course, freshman year, page 35.

Sophomore Year

Same as Home Economics Course, sophomore year, page 35.

Junior Year.

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
English IV—Modern Essays.....	3	History I—Industrial History.....	3
Psy. and Ed. IV—General Psychology.....	3	Chemistry X—Food Analysis.....	4
Home Economics VIIa—Dietetics....	2[1]	alternating with	
Home Economics VIIa—House Plan- ning and Sanitation.....	3[1]	Chemistry XIX—Physiological Chem- istry.....	[2]
Art VIII—Arch. Drawing.....	[2]	Art XI—Design.....	[2]
Physical Training.....	[1]	Home Economics XVIIIb—Dressmak- ing.....	[2]
Electives.....	6	Home Economics IX.....	3
A.		Home Economics XII—Home Nursing	1[1]
Bacteriology I—General Systematic...	1[3]	Psy. and Ed. I—History of Education.	3
Zoölogy VIIa—Histology.....	3	Physical Training.....	[1]
Other electives may be substituted if the schedule permits.		Elective.....	2
Bacteriology I must be elected in the Junior year.		Any second-term elective offered in the Home Economics Course.	

Senior Year.

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Economics I—Economics	3	English V—Shakespeare	3
English XIV—Nineteenth Century Poetry	2	Chemistry X—Food Analysis	}
Art III—History of Art	2	alternating with	
Home Economics XXVI—Textiles and Clothing Economics	[2]	Chemistry XIX—Physiological Chemistry	4
Home Economics XXI—Home Administration	[3]	Psy. and Ed. III—Secondary Education	3
Psy. and Ed. II—Principles of Education	3	Vocational Education V—Teaching Home Economics	1[1]
Vocational Education V—Teaching Home Economics	1[1]	Home Economics VIIIb—Dietetics and Child Care	3
Physical Training	[1]	Home Economics XXV—Costume Design	[3]
		Physical Training	[1]

*To find total credits in any course or in any term add laboratory credits (inside brackets) to recitation credits (outside brackets).

Degrees

The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 25 to 40. The degree of Bachelor of Education is conferred upon a student who has completed one of the educational courses outlined on pages 37-38. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satisfactory thesis in applied or economic science, and upon passing examinations in the subjects pursued. Candidates not graduates of this college must file with the committee on graduate study, not later than October first, a detailed statement of their previous work, certified by the proper authorities. They must select, not later than November fifteenth, a major and a minor subject which must be closely related and have the approval of the committee on graduate study and of the professor in whose department the principal work is done. Major subjects may be selected in any of the following departments: agriculture; botany; chemistry; zoölogy; bacteriology; home economics; electrical, mechanical and civil engineering. The minor may be selected from advanced undergraduate subjects outlined in the catalog; the major, however, must be advanced work specially arranged with the individual professor.

The requirements for the degree of Mechanical Engineer, Electrical Engineer, or Civil Engineer consist of three years of success-

ful professional practice, subsequent to the Bachelor's degree, one of which must have been in a responsible position; the presentation of an acceptable thesis; and the passing of examinations upon the investigations involved in the thesis. The requisites for the degree of Master of Agriculture are the same as for the engineering degrees, except that five years of professional practice are required.

A fee of five dollars is charged for registration for an advanced degree. Students from outside the state pay a tuition fee of fifty dollars during the year of residence. The cost of a diploma is five dollars. The thesis for all the advanced degrees must be typewritten, upon paper of the size and quality prescribed, and two copies must be in the hands of the president not later than June first.

Teachers' Certificates.

The following resolution adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island College will be received as evidence of the required qualifications in scholastic subjects for professional teacher's certificate valid in public secondary schools."

Rhode Island State College also offers professional courses in all subjects required by the State Board of Education for a professional teacher's certificate, and graduates of the college who have completed all the subjects in psychology and education will be accredited in full for a teacher's certificate of professional rank. By arrangement with the State Board for Vocational Education courses at Rhode Island State College are planned to prepare students to meet the requirements set up for teachers of agriculture, home economics, and related subjects in trade and industry.

By action of the Regents of the State of New York, taken June 9, 1910, the degrees of B. S. and M. S. from this college are accepted as a basis for the issuance of licenses to teach in that state.

Employment

The College maintains an Employment Committee whose purpose is to list as many positions, of all kinds, as possible. The under-

graduate is advised as to work for the summer and the graduate is helped to find a position as soon as he leaves school. The Committee is frequently appealed to for candidates for good situations where experience is called for. Thru a card index of the alumni of the College the Committee brings the proper persons into contact with these openings.

The Committee, of course, is not able to guarantee places, and yet it usually lists more positions than it can fill.

Correspondence is solicited from employers and from those wishing to secure employment. Address: Employment Committee, Rhode Island State College, Kingston, R. I.

Reserve Officers' Training Corps

The Reserve Officers' Training Corps at Rhode Island State College is one of the units that is expected to provide officers for the organizations of the 76th Division of the Organized Reserves, which division has been allotted to the States of Rhode Island and Connecticut.

It is the purpose of the R. O. T. C. to train students of this college so that upon graduation they may qualify for commissions as Second Lieutenants in the Infantry, Officers' Reserve Corps. When so qualified and commissioned, they will in all probability be assigned by the War Department to that unit of the 76th Division nearest their residence in accordance with their qualifications and preferences.

Graduates of the R. O. T. C. may be recommended to take the examination for commissions in the Regular Army if they desire. There are at the present time many vacancies in the officer personnel of the Regular Army.

A graduate of the R. O. T. C. has an added value as a high school teacher because he is qualified to teach military training. There is a large demand for men so trained.

DEPARTMENTS OF INSTRUCTION

The following subjects are offered in the different departments. In the departments of instruction all subjects preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture

PROFESSOR ADAMS, PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK,
MR. BRETT, MR. MARSH, MR. KEEGAN.

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work outlined above, all students registered for a degree in agriculture will be required to show certain familiarity with the ordinary operations of the farm, before such degree is given.

In order that those students who have not had an opportunity to receive training in the practical work of the farm may become familiar with some of the more common operations, they will be required, during their connection with the college, to do a certain amount of routine farm work without pay. This will include work in the dairy barn, poultry yard, greenhouses and gardens. This training will be in addition to the laboratory credits prescribed in the regular course. The amount of such work required will depend upon the efficiency shown by the student. No college credits will be given for this work, yet the neglect of this phase of the training may be considered a sufficient cause for dismissal from the institution. Students taking practical work upon farms during the summer vacations will be required to furnish a certificate from their

employers, stating the time spent on the farm and the kind and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is to elect during the Senior year.

AGRONOMY

PROFESSOR ADAMS, MR. KEEGAN.

The instruction in agronomy begins the first term of the Junior year, when a study is made of the soil. Following this work are subjects dealing with the field crops and their uses as food for man and beast. In the work with soils and fertilizers, especial emphasis is placed upon the problems connected with the proper use of chemical manures.

The business side of farm life is given attention in the subject treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment station, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery.

Students have the advantage of field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects

II. Forage Crops.—History and development of the plants used for forage silage, methods of construction of silos. *Two recitation credits, first term. Elective for Seniors in Agriculture and required of Juniors in Education Course, Agricultural option.* Mr. Keegan.

III. Soils and Fertilizers.—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Three recitation and one and one-half laboratory credits, first term. Required of Juniors in Agriculture and of Seniors in Education Course, Agricultural option; option for Juniors in Applied Science. Prerequisite: Chemistry I and II.* Mr. Keegan.

IV. Farm Crops.—Origin and history; production and place in the rotation of corn, wheat, oats, potatoes, clovers, grasses, and root crops. *Three recitation credits and one laboratory credit, second term. Required of Juniors in Agriculture; of second-year students in Education Course. Agricultural option. Option for Juniors in Applied Science. Prerequisite: Botany I and II.* Mr. Keegan.

VI. Farm Machinery.—Development of farm machinery, methods of construction, function, and operation. *Two recitation credits and one laboratory credit, second term. Elective for Juniors in Agriculture.* Mr. Keegan.

VII. Farm Management.—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming accounts. *Two recitation credits, second term. Required of Juniors in Agriculture. Prerequisite: Agronomy III.* Professor Adams.

VIII. Farm Management (Advanced).—Individual problems of farm management are assigned. Field trips are made for studying different types of farming. Problems in planning cropping systems and other management work. There will be at least two one-day field trips. *One recitation and two laboratory credits, second term. Elective for Seniors in Agriculture.* Professor Adams.

IX. Literature.—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports on special topics. *Two recitation credits, second term. Elective for Seniors in Agriculture.* Professor Adams.

X. Agricultural Experimentation.—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits, second term. Required of Seniors in Agriculture.* Professor Adams.

XI. Plant Breeding.—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Three recitation credits, first term. Required of Seniors in Agriculture; option for Seniors in Applied Science. Prerequisite: Botany I and II.* Professor Adams.

XII. Farm Accounting.—Aims and objects of farm accounts, farm inventories single enterprise accounts, complete set of farm accounts and special records. Emphasis will be placed upon the interpretation of results as applied to the organization of a farm. *One recitation and two laboratory credits, first term. Elective for Seniors in Agriculture.* Professor Adams.

XIII. Marketing of Farm Products.—Kinds of markets, methods of sale, marketing costs, prices, standardization of farm products, organization of co-operative markets. *Three recitation credits, second term. Required of Seniors in Agriculture. Option for Seniors in Applied Science.* Professor Adams.

ANIMAL HUSBANDRY

PROFESSOR LADD, ASSISTANT PROFESSOR BURDICK, MR. BRETT.

The subjects in animal husbandry are so arranged as to furnish practical as well as theoretical instruction in the selection, care, and management of live stock on the farm. All students who graduate in agriculture are required to study breeds of stock, stock-judging, and veterinary practice. The student is taught how to select and care for farm animals. Students specializing in animal husbandry are offered advanced stock-judging, the principles of feeding, breeding, and the management of herds, flocks, and studs. Work in dairying is offered during the second term of the Junior year, and one who cares to specialize will find an elective thruout the Senior year.

Instruction in poultry culture is given during the Senior year, and is both practical and theoretical. During the same year an elective is offered in advanced poultry judging and poultry investigation. The equipment in poultry is particularly strong. The college poultry plant enables the student to obtain a large amount of practical experience in incubation, brooding, feeding, and general management. In addition to the poultry stock in the college yards, students have the opportunity of following the investigations which are being conducted by the experiment station. An eight weeks' course in poultry keeping is offered also during the winter months, full information concerning which may be obtained by addressing the President of the college.

Subjects

I. Stock Judging.—Scoring and comparison of various types of horses, cattle, sheep and swine, from the standpoint of the market and the producer. *Two laboratory credits, second term. Required of Freshmen in Agriculture, and of first-year students in Education Course, Agricultural option.* Professor Ladd.

II. Advanced Stock Judging.—A continuation of the work given in Animal Husbandry I in the judging of the various classes of farm animals. Tracing of pedigrees. Students chosen to represent the college in the annual stock-judging contest will be credited with this subject. *Two laboratory credits, second term. Elective for Juniors or Seniors in Agriculture.* Professor Ladd.

III. Breeds.—History and characteristics of the principal types and breeds of farm animals. A study of conditions to which each is adapted. *Two recitation credits, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option.* Professor Ladd.

IV. Principles of Breeding.—A study of the science and art of breeding. Discussion of the laws of heredity as applied to improvement of animal types. Special attention is given to recent experimental work in breeding. *Three recitation credits, second term. Required of Seniors in Animal Husbandry; option for Seniors in Applied Science; elective for others. Prerequisite: Zoölogy X.* Professor Ladd.

V. Animal Husbandry. Management of Dairy Cattle.—This subject covers the field of milk production. It includes the building up of the dairy herd; care and management of the dairy calf; cost of growing dairy heifers; selection and care of the dairy sire; cow testing associations, bull associations and calf clubs; advanced registry work; construction of dairy barns and silos; production of certified and high grade milk; cost of milk production. *Two recitation credits, first term. Elective for Seniors in Agriculture.* Professor Ladd.

VI. Feeds and Feeding.—Composition and digestibility of feeds, principles of animal nutrition. Various methods of feeding farm animals. Balanced rations. Feeding standards. Compounding and figuring the cost of rations for different types and classes of animals. *Three recitation credits, first term. Required of Seniors in Agriculture, and of second-year students in Education Course, Agricultural option; option for Seniors in Applied Science. Prerequisite: Chemistry XIV.* Professor Ladd.

VII. Dairy Practice.—Lecture and laboratory practice in Babcock test and in handling milk and making butter on the farm. Herd testing methods. *One recitation and two laboratory credits, second term. Required of Juniors in Animal Husbandry; elective for others.* Assistant Professor Burdick.

VIII. Dairy Practice.—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and two laboratory credits, thruout the year. Elective for Seniors in Agriculture.* Assistant Professor Burdick.

IX. Research and Literature.—*Hours to be arranged, first term. Elective for Seniors in Agriculture.* Professor Ladd.

X. Veterinary Practice.—Veterinary anatomy, materia medica, obstetrics, pathology. Combating disease from the farmer's standpoint. Causes and treatment of injuries. *Three recitation credits, first term. Elective for Juniors in Agriculture. Prerequisite: Zoölogy X.* Professor Ladd.

XI. Animal Husbandry.—Animal Nutrition.—Advanced study of the principles of animal nutrition. Consideration of the classes of food nutrients; functions of each in the body; digestion, absorption and assimilation; demands for maintenance, growth, fattening, milk and work. Compilation of experimental feeding data. *Two recitation credits per week, second term. Elective for Seniors in Agriculture.* Professor Ladd.

XIIa. Poultry Culture.—A study of all branches of poultry keeping. *One recitation credit, first term. Required of Juniors in Agriculture, and of first-year students in Education Course, Agricultural option.* Mr. Brett.

XIIb. Poultry Culture.—Laboratory work, consisting of pen practice, incubation, brooding, killing and dressing. *Two laboratory credits, second term. Elective for Juniors in Agriculture.* Mr. Brett.

XIII. Judging Poultry.—Practice in judging standard poultry both by comparison and score card methods. *Two laboratory credits, first term. Elective for Seniors in Agriculture.* Mr. Brett.

XIV. Poultry Husbandry.—Study of poultry investigations and experimental work in various lines of poultry keeping. *At least two laboratory credits, thruout the year. Elective for Seniors in Agriculture, and option for Seniors in Applied Science, first term.* Mr. Brett.

XV. Management of Beef Cattle and Horses.—Studies will be made of successful practices in feeding for the market as well as advertising, fitting for sale and show ring, and the general care and management of beef cattle. Horse production including market classes of horses, their production and utility, and successful methods of handling and training horses. *Two recitation credits, first term. Elective for Seniors in Agriculture.* Professor Ladd.

XVI. Management of Sheep and Swine.—Production of mutton and wool; production of spring lambs; fattening sheep and lambs for market; general care and management of the breeding flock; advertising, fitting for sale and the show ring. Pork production, breeding, care and management, diseases, markets, cost of production. *Two recitation credits, second term. Elective for Seniors in Agriculture.* Professor Ladd.

HORTICULTURE

MR. MARSH, MR. KEEGAN.

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the horticultural building. Attached to this building are greenhouses of modern construction, containing over 9,000 square feet under glass, 3,000 square feet of which are used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords the student an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens, and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity especially for the study of apples and pears. A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects

I. Propagation of Plants.—Different methods, including seed testing. Soft, green, and hardwood cuttings. Layering, grafting, and budding. *One recitation and one laboratory credit, first term. Required of Freshmen in Agriculture. Option for Juniors in Applied Science.*

II. Vegetable Gardening.—Underlying principles and types of vegetable gardening; study of individual crops; text-book work. *Two recitation credits, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option; option for Seniors in Applied Science.*

III. Fruit Culture.—Fundamental principles of orcharding; soil, fertilizer, and cultivation. Methods of laying out orchards and planting. Tillage, pruning, and spraying. Harvesting and storing fruits. Collateral reading and practical work. *Three recitation credits, first term. Required of Juniors in Agriculture, and of second-year students in Education Course, Agricultural option. Mr. Marsh.*

IV. Spraying and Pruning.—Preparation and application of spray mixtures; insecticides and fungicides. Methods of application for different orchard enemies, and machinery used. Pruning of fruit trees and ornamental shrubs. *One recitation and one laboratory credit, second term. Required of Freshmen in Agriculture and of first-year students in Education Course, Agricultural option; option for Juniors in Applied Science. Mr. Marsh.*

V. Greenhouse Construction and Management.—Study of the different types of glasshouse structures; methods of heating and ventilating. *One recitation and two laboratory credits, second term. Elective for Juniors in Agriculture.*

VI. Floriculture.—History of floriculture. Study of greenhouse plants, collectively and individually; practical work in propagation, potting, watering, ventilating, fumigating, and spraying. Study of bulbs, bedding plants, palms and ferns. *One recitation and two laboratory credits, entire year. Elective for Seniors in Agriculture. Prerequisites: Horticulture V.*

VII. Horticulture By-Products.—Principles of canning and preserving fruits, manufacture of fruit juices and butters, cider, vinegar, evaporated fruits, pickles, sauces, jams and jellies. The aim of this subject is to equip the student with a knowledge of the means of converting surplus and low grade horticultural products into salable manufactured goods so as to make profits where losses might otherwise occur. *Two recitation credits, first term. Elective for Seniors in Agriculture. Prerequisite: Hort. III or Hort. XVII. Mr. Marsh.*

IX. Assigned Work.—Special subjects chosen by the student. *Elective for Seniors in Agriculture. Hours to be arranged.*

X. Pomology.—Orchard and bush fruits. Study of types; origin, and history; classification, description, and methods of handling. Orchard management. *One recitation credit and two laboratory credits, thruout the year. Option for Seniors in Agriculture, first term; elective second term. Prerequisites: Horticulture III.* Mr. Marsh.

XI. Advanced Vegetable Gardening.—Study of one or more crops selected by student. Practical work, research work, and text-book. *One recitation credit and two laboratory credits, second term. Elective for Seniors in Agriculture.*

XVI. Landscape Art.—This subject is designed for students in general, and consists in the study and application of the rules and principles governing landscape design, the layout of farm, village, and city places, making of lawns. The use of ornamental trees and shrubs, flower beds, etc. *One recitation and two laboratory credits, first term. Elective for Juniors in Agriculture, and for first-year students in Education Course, Agricultural option; option for Seniors in Applied Science. Prerequisite: Botany III.* Mr. Keegan.

XVII. Small Fruits and Grapes.—The strawberry, raspberry, blackberry, dewberry, currant, gooseberry, grape. History; extent of cultivation; and management in home and commercial plantations. *Two recitation and one laboratory credit, second term. Given in alternate years; next given in 1923. Required of second-year students in Education Course, Agricultural option; option for Juniors and Seniors in Agriculture.* Mr. Marsh.

Art

ASSISTANT PROFESSOR ELDRED.

The purpose of the subjects described below is to meet the drawing requirements of the Science laboratories, to give some knowledge of the principles of design and their practical applications, and to develop the appreciation of beauty in nature and in art. For agricultural and applied science students the work comprises outline drawing in pencil, from plant and animal forms and from objects chosen to illustrate the principles of perspective. In the home economics course, greater emphasis is placed upon the principles and practice of design, upon the study of color and color harmony, and upon the application of all these to such problems as those of costume and the arrangement, furnishing, and decoration of the home. The brief course in the history of art aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. The department has a considerable equipment of illustrative material for this work, including

a collection of about one hundred and fifty casts and some four hundred photographs of folio or larger size, with several thousand smaller prints.

Subjects

II. Pencil Drawing from Objects.—Chiefly drawing from plant and animal forms, with some work in freehand perspective. *One laboratory credit, first term. Required of Freshmen in Agriculture and in Applied Science.*

III. History of Art.—A brief survey of European art to about 1850, with the twofold purpose of showing the relation between art and the life of the people in various periods and of developing the appreciation of beauty as found in the fine arts. *Three recitation credits, first term. Required of Seniors in Home Economics and in Teacher-Training Course in Home Economics.*

V. Drawing in Charcoal from Still Life or the Cast.—*Two or more laboratory credits, second term. Elective.*

VI. Pen-and-Ink Drawing, Water Color or Pastel.—*Two or more laboratory credits, second term. Elective.*

VII. Modeling in Clay, from Cast or Object.—*Three laboratory credits, second term. Elective.*

VIII. Architectural Drawing and Interior Decoration.—The drawing of house plans, etc., and exercises illustrating the application of design principles to the planning, decoration and furnishing of the home. *Two laboratory credits, first term. Required of Juniors in Home Economics and in Teacher-Training Course in Home Economics.*

IX. History of American Art.—A study of American art and its relation to the national life. *Two recitation credits, first or second term. Elective.*

X. History of Modern European Art.—A continuation of subject III. *Two recitation credits, second term. Elective.*

XI. Theory of Design.—Costume Illustration.—Further study of the principles of design taken up in subject XII, with especial reference to their application in costume design. *Two laboratory credits, second term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics.*

XII. Drawing and Design.—An elementary consideration, by means of analysis, criticism, and original design, of the elements of beauty (including color) as exemplified in the industrial arts. *Three laboratory credits, second term. Required of Freshmen in Home Economics, and of first-year students, Education Course, Home Economics option.*

XIII. The Appreciation of Art.—A study of certain masterpieces for the elements of beauty which they present, without especial reference to their historical relations. The aim is to emphasize the operation in the fine arts of

the same design principles already studied in the industrial arts, to provide a foundation for the study of the history of art, and to develop increased capacity for the enjoyment of beauty. *Two recitation credits, first or second term. Elective.*

Bacteriology

DR. MAY, MISS WILLIAMS.

The instruction in bacteriology is arranged to meet the requirements of two classes of students:

In the first place, the subject is presented in an elementary way for those whose main interest lies in other fields of work, but who at the same time desire a general knowledge of micro-organisms and their relation to problems of human life, including agriculture, sanitation, foods, and the many problems of personal and public health and hygiene. For such students Bacteriology I is offered.

In the second place, the work in bacteriology is arranged to afford opportunity for specialization on the part of the students who anticipate entering some branch of applied bacteriology after graduation. Such specialization naturally looks forward to service in (a) the educational, (b) the commercial, (c) the municipal, or (d) the research field, as exemplified by college teaching, private manufacturing laboratories of biologic products, departments of public health (city or state), and the State Agricultural Experiment Stations and privately endowed institutions of research, respectively. For students desiring to specialize in any of these fields, Bacteriology IIa and IIb are offered.

In Bacteriology IIa, opportunity is offered to acquire advanced bacteriological technique. The program is confined largely to laboratory work. In the second term of advanced bacteriology (II)b advanced technique is continued with special reference to diagnostic blood tests involving agglutination, precipitation, and complement-fixation methods.

Subjects

I. General Bacteriology.—A subject designed to give the student a general knowledge of the bacteria; a study of laboratory methods and technique for the cultivation of bacteria; the isolation and determination of unknown species. The students will also be made familiar with the varied application of bacteriology to practical problems, including the bacteriology of air, water, milk and other dairy products, together with the relation of bacteria to agronomy, dairying, hygiene and to the prevention, diagnosis and treatment of communicable diseases. *One recitation credit and three laboratory credits,*

first term. Prerequisite: Botany I or Zoölogy I. Required of second-year students in Education Course, Home Economics and Science options, and of Juniors in Home Economics. Elective for all others except Freshmen.

Ila. Advanced Bacteriological Technique.—A study of special methods employed in the investigation of bacteriological problems. The work includes the preparation of culture media, the bacteriological examination of air and food products; a study of enzyme production by bacteria; of acid production; the relation of bacterial growth to oxygen supply; determination of thermal death point, of testing the germicidal power of unknown disinfectants, etc. *Four laboratory credits, first term. Elective. Prerequisite: Zoölogy VIII and Bacteriology I.*

Ilb. Advanced Bacteriological Technique.—Laboratory studies involving the examination of the blood by bacteriological, histological and serological methods; serological diagnosis; and studies in immunity. *Four laboratory credits, second term. Elective for students who have passed with credit in Bacteriology Ila.*

Botany

DR. BROWNING, MR. RICHMOND.

The subjects of this department are fundamental to much of the technical and practical work in agriculture and home economics. Plants for study are near at hand. A great variety of economic plants is grown on the land of the experiment station, and in the fields of the college farm. Many trees and shrubs are cultivated on the campus and plants of the native flora are always available. The greenhouses also furnish much material. The laboratory is equipped with dissecting and compound microscopes, paraffin bath, and simple physiological apparatus. A good working library, including several botanical periodicals, charts, models, and an herbarium of about 6,500 specimens are important factors.

Subjects.

I. General Botany.—A study of common plants; their structure, physiology, and adaptation to environment. *One lecture credit and two laboratory credits thruout the year. Required of Freshmen in Agriculture, Applied Science, and Home Economics, and of first-year students in the Education Course.*

II. Botany of Crop Plants and Weeds.—*One lecture credit and two laboratory credits, first term. Required of Sophomores in Agriculture and Applied Science, and of second-year students in Education course, Agricultural option.*

III. Trees and Shrubs.—The determination of native and introduced trees

and shrubs in summer and winter condition. *One laboratory or field credit thruout the year. Required of first-year students in Education Course, Agricultural option, and of second-year students, Education Course, Science option. Required of Sophomores in Agriculture.*

IV. Forestry.—The management of a typical New England wood lot, a study of the structure and uses of various woods; the use of wood preservatives. *Two laboratory credits, second term. Given in alternate years. (Given 1921-1922.) Option for Juniors in Agriculture and Applied Science or for Seniors in Agriculture.*

V. Histology.—A study of standard cytological methods of embedding, sectioning and staining; a series of comprehensive histological studies on the seed plants. *One lecture credit and four laboratory credits, first term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.*

VI. Pathology.—Parasitic fungi, the diseases of economic plants caused by them and the methods of controlling these diseases. *One lecture credit and four laboratory credits, second term. Elective for Seniors in Agriculture. Option for Juniors in Applied Science.*

VII. Assigned Work.—*Three credits thruout the year. Elective for Seniors in Applied Science and Agriculture.*

VIII. Physiology.—Lectures and laboratory work on the special physiology of the vascular plants. Prerequisite, course I or its equivalent, and a knowledge of physiology and chemistry. *Two laboratory credits and one lecture credit, second term. Elective for Juniors and Seniors in Applied Science.*

Chemistry

PROFESSOR INCE, PROFESSOR HARTWELL, PROFESSOR JACKSON,
MR. KEANEY, MR. MCGUIRE.

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. The work is designed to give a thoro elementary knowledge of theoretical and descriptive inorganic chemistry, including the principal technical processes, and a brief account of the carbon compounds. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Two periods per week for the first half-year and three for the second half-year are devoted to the lectures and recitations, and three hours per week for a half-year to the practical work in the laboratory, where the student has an opportunity to verify some of the chemical theories and to become familiar

with substances and their chemical behavior. During the second half of this year the laboratory period is devoted to qualitative analysis, which for Chemical Engineering and Applied Science students continues thru the first half of the Sophomore year. The subject is taught in part by means of recitations and lectures, but mainly by work in the laboratory. Students are required to complete a systematic course in basic and acid analysis, and to analyze correctly a number of alloys, salts, and minerals.

Quantitative analysis is taught mainly by laboratory practice, but sufficient time is devoted to lectures and recitations to teach thoroly the fundamental principles involved. The work comprises gravimetric and volumetric analysis, and the quantitative determination of salts, alloys, ores, minerals, and commercial and food products. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such theoretical and practical knowledge as to prepare him for analytical work of any kind.

The study of organic chemistry begins with a short course, designed to cover the general principles and methods, and to include a description of the more important compounds. The subject is continued by those who wish to specialize in chemistry in a more extended course covering the aromatic series and the chemistry of the dye-stuffs, and accompanied by laboratory work in organic preparations and analysis. The theoretical and basic principles of chemistry, with their general application, are thoroly studied by recitation, lectures, and laboratory work in the course in physical chemistry.

The descriptive side of industrial chemistry, which comprises a general survey of the technical applications of chemical principles to the arts and industries, is studied by recitation work; while practical technical operations, such as textile coloring, suited to the needs of the individual student, are studied by laboratory practice.

Agricultural chemistry, required of agricultural students in the Sophomore year, embodies the chemistry of soils and fertilizers, also the chemistry involved in the changes which take place during the growth of animals and plants, as well as in the storage or manufacture of the ordinary farm products.

Subject XXI is intended to familiarize the student with the general field of chemical literature, and to inculcate the habit of keeping

up with the recent advance in chemical science by reports and discussion of articles appearing in the chemical journals. This course is preparatory for Subject XX, which involves original investigation.

The laboratory occupies the first floor and a part of the basement of Science Hall, seventeen rooms altogether, including a large general laboratory, organic and analytical laboratories, weighing room, library, large lecture room, recitation room, two offices, store rooms and supply room. It is well equipped with apparatus and consulting library for teaching the subjects mentioned below.

Subjects.

I. General Chemistry.—*Two recitation and one and one-half laboratory credits, first term. Required of Freshmen in all courses, and of first-year students in Education Courses. The Department.*

II. General Chemistry and Qualitative Analysis.—*Three recitation and one and one-half laboratory credits, second term. Required of Freshmen in all courses and of first-year students in Education Courses. The Department.*

III. Qualitative Analysis—Basic and acid analysis; analysis of salts, industrial and natural products. *Three laboratory credits, first term. Required of Sophomores in Applied Science and Chemical Engineering and in Education Course, Science option. The Department.*

IVa. Organic Chemistry.—*Three recitation credits and one laboratory credit, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Required of second-year students, Education Course, Agricultural and Home Economics options, and optional for second-year students, Education Course, Science option. Professor Ince.*

IVb. Organic Chemistry.—*Three recitation credits and one laboratory credit, first term. Required of Sophomores in Home Economics, Agriculture, and Applied Science; elective for others who have completed Chemistry III. Professor Ince.*

V. Organic Chemistry (advanced).—*To be given alternate years. Given next in 1924. Four recitation credits, second term. Required of Juniors in Chemical Engineering and of those who take the Chemical Option in Applied Science. Elective for others who have completed Chemistry IV. Professor Ince.*

VI. Organic Chemical Laboratory.—*Three laboratory credits, second term. Required of Juniors in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry IV. Professor Ince.*

VII. Quantitative Analysis.—Analysis of minerals, ores, alloys, and industrial products. *Three laboratory credits, first term. Required of Juniors in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry III.* Professor Ince.

VIII. Quantitative Analysis.—*Five laboratory credits, second term, Junior year. Required of students in Chemical Engineering, and of students who take the Chemical option in Applied Science. Elective for those who have completed Chemistry III.* Professor Ince.

X. Food Analysis.—To be given alternate years; given next in 1924. *Four credits, second term. Required of Seniors and Juniors in Home Economics and in Teacher-Training Course in Home Economics. Elective for others who have completed Chemistry IVb.* Professor Jackson.

XII. Physical Chemistry.—To be given alternate years. Given in 1923. *Four recitation credits, second term. Required in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry III.* Professor Jackson.

XIV. Agricultural Chemistry.—*Four recitation credits, second term. Required of Sophomores in Agriculture and of second-year students in Education Course, Agricultural option. Prerequisite: Chemistry I, II and IVb.* Professor Hartwell.

XV. Gas Analysis.—See Mechanical Engineering XV.

XVIa. Industrial Chemistry.—*Three recitation credits, first term. Required of Juniors in Chemical Engineering and of Juniors who take the Chemical option in Applied Science. Elective for others who have completed Chemistry IV.* Professor Jackson.

XVIb. Industrial Chemistry.—*Three recitation credits, first term. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical option in Applied Science. Elective for others who have completed Chemistry XVIa.* Professor Jackson.

XVII. Industrial Chemistry.—The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis, textile coloring, soap, rubber, refining of oils, water analysis, etc. *Three laboratory credits thruout the year. Required of Seniors in Chemical Engineering and of Seniors who take the Chemical option in Applied Science.* Professor Jackson.

XIX. Physiological Chemistry.—To be given alternate years. Given in 1923. *Four credits, second term. Required of Seniors and Juniors in Home Economics and in Teacher-Training Course in Home Economics; option in Applied Science for Seniors.* Professor Ince.

XX. Assigned Work.—*Three laboratory credits, thruout the year. Re-*

quired of Seniors in Chemical Engineering who do not take the work in the Reserve Officers' Training Corps. Required for the first term of Seniors who take the Chemical option in Applied Science. Professor Jackson.

XXI. Reports and Discussion of Chemical Subjects and Recent Investigations.—*Two credits, second term. Required of Seniors in Chemical Engineering; and of Seniors taking the Chemical option in Applied Science. Professor Ince.*

XXII. Organic or Physical Chemistry, a laboratory course to accompany Chemistry V and Chemistry XII alternately.—*Two laboratory credits, second term. Required of Seniors in Chemical Engineering, and of those who take the Chemical option in Applied Science. Professor Ince, Professor Jackson.*

XXIII. Chemistry.—Introductory Quantitative Analysis. *Two laboratory credits, second term. Required of Sophomores in Chemical Engineering and of those who take the Chemical option in Applied Science. Elective for others who have completed Chemistry III. Professor Ince.*

Economic and Social Science

PRESIDENT EDWARDS

I. Economics.—Text-book, supplemented by lectures, reading, and essay. *Three recitation credits, first term. Required of Seniors in all courses, except in Education course, Agricultural and Science options.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.*

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmers, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations; federation of rural social forces. *Elective.*

Engineering.—Chemical

PROFESSOR INCE, PROFESSOR JACKSON, MR. KEANEY, MR. MCGUIRE.

The course in chemical engineering is based upon the principles of chemistry and of mechanical and electrical engineering. It is designed to prepare men for those industries in which chemical processes play a vital part. The subjects in chemistry aim to train the student thoroly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the various branches of chemical analysis, and to make him familiar with the

practical applications of chemistry. The subjects in mathematics, physics, mechanical and electrical engineering aim to give the training necessary to solve the mechanical and electrical problems that present themselves when chemistry is applied to the industries.

While the primary purpose is to turn out men well equipped to take up any line of chemical engineering, yet, owing to the important textile interests in this state, and the increasing importance of the manufacture of chemicals and dyestuffs, especial emphasis is placed on the manufacture and application of dyes. The following are some of the industries which offer opportunities to the chemist and the chemical engineer:—The manufacture of chemicals and dyestuffs; the bleaching and dyeing of cotton, wool, and silk; the manufacture of fertilizers, explosives, hydraulic cement, clay products, glass, sugar, paper pulp, paper, soap, paint and varnish; the refining of fats and oils; the metallurgical operations; the acid and alkali industries; the utilization of fuel by combustion or destructive distillation to form gas, coke, and tar, embracing further the whole field of forest-products utilization; and the processes of water and sewage purification.

A detailed description of the subjects will be found under their respective departments.

Engineering.—Civil

PROFESSOR WEBSTER, MR. KNOWLES.

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various fields of civil engineering. With this object in view, application of the theories and principles learned in the class-room is made in the field, laboratory, and drafting room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the students' opportunities, the name of the department has been changed from Highway Engineering to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance

of highway engineering in this state and thruout the country in general, considerable emphasis is still placed on this phase of engineering work.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and testing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects.

Subjects

I. Surveying.—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering, and in Agriculture.*

II. Topographic Surveying.—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits, second term. Required of Sophomores in Civil Engineering.*

IIIa. Railroad Engineering.—The work consists of a reconnoissance, a preliminary and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates are made. A study is also made of the properties of curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Two recitation and three field credits, first term. Required of Juniors in Civil Engineering.*

IIIb. Railroad Engineering.—The principles of economic railroad construction and maintenance; railway appliances, ballast, and roadbed, culverts and trestles, turnouts, sidings, yards, terminals, signaling, locomotive and grade problems, betterment surveys, etc. *Three recitation credits, second term. Required of Juniors in Civil Engineering.*

IV. Graphic Statics.—Instruction is given in graphic statics and its application in the design of simple framed structures. *Two recitation credits, first term. Required of Juniors in Civil Engineering.*

V. Roads and Pavements.—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction and maintenance of earth, gravel, and macadam roads, together with a dis-

cussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the surveying, leveling, cross-sectioning and designing of a short piece of road. *Three recitation credits and one field credit, second term. Required of Juniors in Civil Engineering.*

VI. Bridge Details.—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *Two laboratory credits, first term. Required of Seniors in Civil Engineering.*

VII. Bridge Analysis.—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

VIII. Bridge Design.—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits, second term. Required of Seniors in Civil Engineering.*

IX. Masonry Construction.—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and a systematic and thoro laboratory course on cement testing is given. *Two recitation credits and one laboratory credit, second term. Required of Seniors in Civil Engineering.*

X. Reinforced Concrete.—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XI. Sewerage.—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers; removal of house sewage; the design and construction of sewers and method of sewage disposal. *Two recitation credits, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of waterworks, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitation credits, second term. Required of Seniors in Civil Engineering.*

XIII. Tunneling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit, second term. Elective for Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits, second term. Required of Seniors in Civil Engineering.*

XV. Assigned Work.—With the advice and consent of the head of department, the student elects three hours' work in the Senior year. This may be research, thesis, or recitation and laboratory work, depending upon the qualifications of the student. *Three credits, thruout the year. Required of Seniors in Civil Engineering not in R. O. T. C.*

XVII. Metal Structures.—The graphic determination of stresses in steel mill buildings. *One laboratory credit, second term. Elective for Seniors in Civil Engineering.*

XVIII. Irrigation Engineering.—This includes a study of the impounding, diverting, flow, and measurement of water, quantity required, canals, canal works, storage reservoirs, waterways, etc. *Three recitation credits, first term. Elective for Seniors in Civil Engineering.*

Engineering.—Electrical

PROFESSOR ANDERSON AND ASSISTANT PROFESSOR COGGINS

The aim of the course in electrical engineering is to give the student such training in the fundamental principles of the subject as will fit him to take up, in an intelligent and effective manner, any line of engineering work requiring special electrical knowledge. Instruction is given in both class-room and laboratory, the aim of each method of instruction being to supplement the other, and to develop resourcefulness and the habit of independent thought on the part of the students.

Subjects

I. Theory of Direct Currents.—A detailed study of the theory of direct-current apparatus. The theory of dynamos, motors, and auxiliary apparatus. *Three recitation credits, first term. Required of Juniors in Electrical Engineering and of Seniors in Chemical, Mechanical and Civil Engineering.*

II. Direct-Current Laboratory.—A series of tests of various types of direct-current apparatus. These include magnetization and characteristic curves of different types of machines, as well as tests for efficiency, regulation, temperature rise, and tests of a similar nature. *Three laboratory credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering.*

IV. Theory of Alternating Currents.—Recitations and lectures. The elements of the theory of alternating currents and alternating-current machinery. This subject includes the simple theories regarding the action of A. C. dynamos, motors, converters, and transformers. *Two recitation credits, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical and Civil Engineering.*

V. Theory of Alternating Currents.—Recitations and lectures, continuing subject IV. The more advanced theories regarding the effect of inductance and capacity in A. C. circuits, and of the action of A. C. machinery, are discussed. Assigned readings and reports are a feature of the subject. *Three recitation credits, thruout the year. Required of Seniors in Electrical Engineering.*

VI. Alternating-Current Laboratory.—A series of tests of different types of alternating-current apparatus, such as single and polyphase generators and motors, induction motors, converters, and transformers. *Three laboratory credits, thruout the year. Required of Seniors in Electrical Engineering.*

VII. Design of Electrical Machinery.—General principles of the design of electrical apparatus, including a direct and an alternating current generator. *Three laboratory credits, second term. Required of Seniors in Electrical Engineering.*

VIII. Telephone Engineering.—A consideration of the development of the modern telephone, with special reference to the common battery systems. *One recitation credit, second term. Required of Seniors in Electrical Engineering.*

X. Transmission of Energy.—A study of systems of high-tension distribution, the effect of capacity and inductance, the construction of lines, their protection, and the troubles developing in high-tension work. *Four recitation credits, second term. Required of Seniors in Electrical Engineering.*

XI. Electric Railway Engineering.—A discussion of the economic consideration in the development of an electric railway, methods of construction, the location of the generating station, the design of the distributing system, types of motors, and systems of control. *Two recitation credits, second term. Required of Seniors in Electrical Engineering.*

XII. Assigned Work.—Members of the Senior class are required to prepare and to present before the class, papers, discussions, and reports upon topics of interest to engineers. As a rule, each student presents about four papers in the course of the year's work.

A portion of the assigned time is also devoted to research work, the amount of time so used varying with the nature of the problem, and the ability of the student profitably to utilize the time. *Three laboratory credits, second term. Required of Seniors in Electrical Engineering not in R. O. T. C.*

Engineering.—Mechanical

PROFESSOR WALES, MR. ELDRED, MR. KNOWLES, MR. ARCHIBALD.

It is the object of the work in the department of mechanical engineering to turn out broad-gauged, self-dependent men, well trained in engineering theory, familiar with the practical matters of construction and operation, and having some knowledge of the economic relations which the engineer and industrial development bear to modern society. In the endeavor to train men who will touch life, not at one point, but at many, the work of the department is supplemented and rounded out by extended and vigorous courses along the lines of electrical engineering, physics, mathematics, chemistry, English, history, modern languages, and political economy. The special work of the department of mechanical engineering divides itself naturally into the following general groups: shop practice, design, steam engineering, and experimental engineering. Each of the above groups is amplified and briefly described below:

SHOP PRACTICE

The object of this work is to give familiarity with principles, operations, possibilities, and management, rather than to develop the greatest dexterity in manipulation. Shop practice extends over three years of the course, and comprises forging and foundry work, pattern making, and machine-tool operation. The shops are exceptionally well equipped with machines and tools of all kinds. In the machine shop are six metal lathes, speed lathes, planes, 16-in. shaper, two drills, two tool grinders, drill grinder, milling machine, punching-press, vertical boring and turning mill, together with the usual assortment of tools and auxiliaries. The pattern shop is provided with lathes, circular saw, band saw, jig saw, dowel machine, surface and buzz planers, etc. Fifteen work-benches fully provided with the small tools of the pattern maker complete the equipment. The forge shop is equipped with the usual anvils, forges, fullers, swages, hardies, etc., while a full stock of patterns, shovels, riddles, flasks, and trowels is provided for the work in foundry practice. Enthusiasm is given to the work by the construction of things of real value—a new machine for the shop or a piece of apparatus for the laboratory—instead of spending the whole time on worthless “exercises.”

DESIGN

The work along the lines of design extends thruout the four years, beginning with freehand and mechanical drawing and ending with machine design and power-plant design in the Senior year. Leading up to this final work are the terms of mechanical drawing, descriptive geometry, mechanism, valve gears, dynamics of machines, mechanics, strength of materials, hydraulics, and thermo-dynamics. All the forces of correct theory and the practice of the most successful builders are brought to bear upon the solution of definite, practical problems.

STEAM ENGINEERING

Steam engineering begins in the Junior year and runs thru the remainder of the course. A rigorous study of the mathematical theory of thermo-dynamics supplies the foundation for the study of boilers and engines, design and economy, and the various devices and auxiliaries of the power plant. In the Senior year is considered the particular branch of heating and ventilating. In this year, also, the subject of power plants is taken up, which applies all the previous training in steam engineering, and which brings together and unifies all allied subjects.

EXPERIMENTAL ENGINEERING

This subject, which extends thruout the Junior and Senior years, is intended to fix the theory developed in all the other lines of work. Instruction is given by means of lectures and laboratory tests. The student becomes familiar with the theory, construction, use, and calibration of the instruments and apparatus used by the engineer, and gains experience in making accurate standard and special tests. The work is divided into four groups: one, dealing with the chemical problems of engineering—testing of gases, oils, fuels, feed water, etc.; a second, with general calibration and testing; a third, with the study and tests of structural materials; and the fourth, with general power-plant testing. In power-plant testing the students make the necessary plans and preparations, perform the experimental work, and prepare formal reports, with recommendations for improvement in economy, etc. These tests are made not only on the college power-plants, but on those of manufacturing establishments of the State. The equipment for experimental work comprises several boilers and steam engines, large steam pump, gas engines, feed-water heaters,

several steam and gas engine indicators, steam calorimeters, tanks, scales, injectors, water turbine, hydraulic ram, pulsometer, centrifugal pump, belt pump, weirs, two-stage air compressor, air-brake outfit, meters, gauges, 50,000-lb. tension and compression machine, apparatus for oil and gas testing, fuel calorimeter, complete outfit for testing cements and concretes, etc. Thruout the work the greatest stress is laid upon the correct calculation and interpretation of results, and accuracy and self-dependence are developed to the fullest.

Subjects

I. Mechanical Drawing.—Lettering, freehand sketching, use of drafting tools, geometrical problems, projections, machine parts. *Four laboratory credits, first term. Required of Freshmen in Engineering.* Mr. Eldred.

II. Forge and Foundry.—Forging, drawing, bending, welding, etc. Principles of moulding, core making, and casting. *Two laboratory credits, first term. Required of Freshmen in Engineering.* Mr. Archibald.

III. Pattern Making.—Use of tools, bench and lathe work, pattern making. *Two laboratory credits, second term. Required of Freshmen in Engineering.* Mr. Archibald.

V. Descriptive Geometry.—Elementary principles; problems relating to the point, line, plane, cylinder and double curved surfaces of revolution, intersections, and developments. *One recitation and two laboratory credits, second term. Required of all Freshmen in Engineering.* Mr. Eldred.

VIa. Mechanical Drawing.—Detail and assembly drawings, elementary machine design. *Two laboratory credits, first term. Required of Sophomores in Mechanical, Electrical, Civil, and Chemical Engineering.* Mr. Eldred.

VIb. Mechanical Drawing.—Continuation of Mechanical Engineering VIa. *Two laboratory credits, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.* Mr. Eldred.

VII. Machine Shop.—Hand work in chipping and filing, use of machine tools, construction of machines. *Three laboratory credits, first term; required of Juniors in Electrical Engineering. One and one-half laboratory credits, second term; required of Sophomores in Civil Engineering.* Mr. Archibald.

VIII. Machine Drafting.—Technique of machine drafting, application of kinematics to the design of gears, valves, linkages, quick-return motions, etc. *Three laboratory credits, first term. Required of Juniors in Mechanical Engineering.* Mr. Eldred.

IXa. Heat Engineering.—Thermo-dynamics.—Mathematical development and discussion of the laws of thermo-dynamics, and their application to perfect gases, saturated and superheated steam. Theory of air compressors, pneumatic machinery, hot-air engines, gas engines, and refrigerating machines.

Boilers, engines, engine economy, effect of cylinder walls, compounding, super-heating, use of jackets, varying cut-off, speed, pressure, etc. Flow of fluids, injectors, and thermo-dynamic principles applied to the steam turbine. *Three recitation credits, first term. Required of Juniors in Mechanical, Electrical, and Civil Engineering, and Seniors in Chemical Engineering.* Professor Wales.

IXb. Heat Engineering.—Continuation of Mechanical Engineering IXa.—*Three recitation credits, second term. Required of Juniors in Mechanical and Electrical Engineering; and for nine weeks, of Seniors in Chemical Engineering.* Professor Wales.

Xa. Applied Mechanics.—Forces, composition and resolution, parallel forces, moments, couples, centres of gravity, velocity, acceleration, energy and momentum, falling bodies and projectiles, centrifugal force, moment of inertia, radius of gyration, angular momentum, energy of rotating bodies, impact, etc. Solution of practical problems. *Five recitation credits, first term. Required of all Juniors in Engineering.* Professor Wales.

Xb. Applied Mechanics.—Strength of materials, stresses of structures, riveted joints, beam theory, struts, columns, shafting, springs, etc. Solution of practical problems. *Five recitation credits, for six weeks, second term. Required of all Juniors in Engineering.* Professor Wales.

XI. Hydraulics.—General principles, head and pressure, center of pressure, velocity of discharge, flow through orifices and over weirs, Bernouilli's theorem, flow through pipes, flow through conduits and canals, energy of flow, horse-power, hydraulic machinery, rams, turbines, centrifugal pumps, and Pelton wheels. Merriman's Treatise on Hydraulics. *Five recitation credits per week, for last twelve weeks of second term. Required of all Juniors in Engineering.* Professor Wales.

XII. Mechanism.—Instantaneous centers, centroids, lobed wheels, belts, pulleys, four-bar linkages, graphical determination of velocity ratios, quick-return motions, straight-line motions, pantographs, trains of gears, epicyclic trains, tooth gearing, epicycloidal and involute teeth, bevel wheels, etc. Schwamb and Merrill's Mechanism. *Three recitation credits per week, second term. Required of Sophomores in Mechanical, Electrical, and Chemical Engineering.* Mr. Eldred.

XIII. Valve Gears.—Plane slide valves, piston valves, riding cut-off valves; Joy and Marshall gears; Stephenson, Gooch, and Wa'scheart link motions; drop cut-off valves; Corliss, Brown, and Putnam valves. Peabody's Valve Gears. Lectures and references. *Three recitation credits per week, second term. Required of Juniors in Mechanical Engineering.* Mr. Knowles.

XIV. Machine Shop.—Advanced work in machine construction. *Three laboratory credits per week, thruout the year. Required of Juniors in Mechanical Engineering.* Mr. Archibald.

XV. Experimental Engineering a.—Lectures and laboratory work in gases, oils, and fuels; flue-gas analysis, calculation of air per pound of coal, loss due to excess air and to imperfect combustion; analysis of fuel gases and calculation of heating values; determination of heating values by the Junkers and Parr calorimeters; study of gases in producer and gas-engine work. Analysis of coal and other fuels. Analysis and testing of lubricating and fuel oils. Testing of boiler waters. *One recitation and one laboratory credit, first term. Required of Juniors in Mechanical Engineering.* Mr. Knowles.

XVI. Experimental Engineering b.—General calibration and testing of engineering instruments and apparatus; gauges; planimeter; manometers; indicators; Prony brakes; scales; valve setting by measurement and by the indicator; Carpenter calorimeter; Peabody calorimeter; flow through orifices; weirs; nozzles; Pitot tube; meters; Venturi meters; hydraulic ram; turbine, etc. *Two laboratory credits per week, second term. Required of Juniors in Mechanical, Electrical and Civil Engineering.* Mr. Knowles.

XVII. Experimental Engineering c.—Properties of materials. Lectures on the metallurgy of iron and steel; effects of impurities; cold-working; repeated stresses; tensile, compressive, and shearing strengths; ductility; resilience, etc.; copper, brass, bronze, and other alloys; timber, stone, and brick. The manufacture of natural and Portland cements; effects of over-and under-burning, over-liming, SO_3 , etc.; discussion of tests and their interpretation. Laboratory work is parallel with lectures. Tensile strengths of cast-iron, wrought-iron, and steel; compressive strength of metals, timber, concrete, cement; shearing tests of metals; transverse tests of timber and iron; stress-strain diagram, elastic limit, yield point, modulus of rupture; tensile tests of cement; pat tests, boiling tests; specific gravity; fineness; time of set, etc. Determination of the best proportions of cement, sand, and rock of given characters. *Two lectures and one and one-half laboratory credits, first term. Required of Seniors in Mechanical, Electrical, and Civil Engineering.* Mr. Knowles.

XVIII. Experimental Engineering d.—Hot-air engine, gas engine, steam pump, injectors, transmission dynamometers; boiler tests; complete tests of power plants; outside work on the H. P. of a stream, with tests of hydraulic power plant; outside tests of manufacturing plants, with calculations, reports, and recommendations. *Two laboratory credits, second term. Required of Seniors in Mechanical Engineering.* Mr. Knowles.

XIX. Heating and Ventilation.—Discussion of the principles and practice of the various systems of heating and ventilating—direct and indirect, hot-air, hot-water, pressure steam, exhaust steam, vacuum systems, fans, blowers; calculation of ventilation and radiation; flues, pipes, and radiators; air troubles; central heating systems with central power plants; design of heating system for a given building. *One recitation credit, second term. Required of Seniors in Mechanical Engineering.* Mr. Knowles.

XX. Machine Design.—Design of machine parts from considerations of

the motions involved, strength, rigidity, and friction; design of a complete machine; calculations with design of some type of engine, starting with given requirement of H. P., speed, etc., and with an assumed theoretical indicator card. *Three laboratory credits, thruout the year. Required of Seniors in Mechanical Engineering.* Mr. Eldred.

XXI. Power Plants and Power-Plant Design.—Study of the various types—as to choice, location, installation, and operation; prime movers, their accessories and auxiliaries.

Steam Plants.—Study of the effects on economy, range, and reliability of simple or compound, condensing or non-condensing engines with various valve gears, throttling and cut-off governors, different boiler installations, feed-water heaters, economizers, pressure regulators, pumps, injectors, mechanical stokers, forced and induced draft, chimneys, etc.; calculations of proper sizes, powers, and strengths of machines and apparatus of the power plant; methods of improving economy. The place of the steam turbine in power-plant work.

Hydro Plants.—Discussion of the types of hydraulic machinery, their efficiency, and the particular conditions to which each is best adapted. This will be a development of the previous work in hydraulics to meet the need of the power engineer.

Gas-Producer Plants.—The different suction and pressure producers, theory, capacity, future, etc.; gas engines, from both the thermo-dynamic and the mechanical points of view. *Two lecture credits and one laboratory credit per week, first term. Required of Seniors in Mechanical Engineering. Two lecture credits per week, first term. Required of Seniors in Electrical Engineering.* Professor Wales.

XXII. Assigned Work.—This may be of the nature of research or of specialized study along some particular line of engineering. *Three credits per week, thruout the year. Required of Seniors in Mechanical Engineering not in R. O. T. C.* Professor Wales.

XXIII. Dynamics of Machines.—Analysis of stresses, effects of inertia, balance, reciprocating parts, flywheels, design of high-speed engines and machinery. *Two recitation credits per week, second term. Required of Seniors in Mechanical Engineering.* Professor Wales.

XXVI. Business Organization and Management.—The organization of engineering industries, and the laws and methods of business applying to them. *Three lecture credits per week, second term. Required of Seniors in Mechanical and Chemical Engineering.* Professor Wales.

English

PROFESSOR CHURCHILL, ASSISTANT PROFESSOR PECK.

The English department offers subjects in literature and in rhetoric and composition. The required work extends over the four years.

Elective subjects in literature are provided for Juniors and Seniors. Both literature and composition subjects place emphasis on the practical and the contemporary phases of the work.

The library is an important factor in the work of the department, as it contains some twelve hundred volumes of representative English and American literature.

LITERATURE

II. Survey of English Literature.—A survey course of English Literature extending to the Victorian Age. *Three recitation credits, second term. Required of Sophomores in Home Economics.*

IV. English Essays.—A critical and comparative study of the work of the English essayists of the nineteenth century. *Three recitation credits, first term. Required of all Juniors except those in Reserve Officers' Training Corps, and of first-year students in Teacher-Training Course in Agriculture and Home Economics.*

V. Shakespeare.—A course in appreciation. Most of the plays are read, then compared, so that the growth and development of Shakespeare's power may be appreciated. One comedy, one historical play, and one tragedy are carefully and critically studied. *Three recitation credits, second term. Required of Seniors in Applied Science, in Home Economics, and in Teacher-Training Course in Home Economics.*

VI. Current Literature and Composition.—A critical study of contemporary work as it appears in a periodical of the type of the *Atlantic Monthly*. Practice in writing familiar essays and short stories. *Two recitation credits thruout the first term. Option for Freshmen in Home Economics.*

VII. The English Novel.—Study of the development and technique of the novel in England. *Two recitation credits, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics Courses.*

VIII. Interpretation.—Training in interpretation and dramatic presentation of a classic drama, leading to the public presentation of the drama selected. *One recitation credit, second term. Elective for Juniors in Home Economics.*

XII. Contemporary Drama.—Lectures on the history and development of the drama. Study of contemporary drama of America and Europe. *Two recitation credits, second term. Elective as an extra for Juniors and Seniors, with credit in Applied Science and Home Economics Courses.*

Either VII or XII will be offered if six or more students ask for the course.

XIV. Nineteenth Century Poetry.—Study of English Poetry of the Victorian Age. Intensive study will be given to the works of two poets. Different poets may be chosen different years. *Two recitation credits, first term. Elective as an extra for Juniors and Seniors in Applied Science. Required of Seniors in Home Economics, and of second-year students in Teacher-Training Course in Home Economics.*

RHETORIC AND COMPOSITION

I. Rhetoric and Composition.—Outlines of rhetorical theory, study of models illustrating the various literary forms, exercises, weekly themes. *Three recitation credits, thruout the year. Required of Freshmen in all courses.*

III. Argumentation.—Theory and Practice. Training in the principles of brief-drawing; weekly practice in extemporaneous speaking and debating. *Two recitation credits, second term. Required of Sophomores in all courses except Home Economics. Elective for Juniors in Home Economics. History II may be taken as an option in place of English III.*

IX. Current Events.—The class is divided into sections of approximately a dozen students each for weekly extemporaneous speaking based on the reading of important articles in current magazines and periodicals. *One recitation credit, first term. Required of Juniors in Agriculture, Applied Science and Engineering. Elective for Juniors in Home Economics. English XIII is offered as an option in place of English IX on approval of Department.*

XIII. Newspaper Writing.—This course is open only to those who have shown special aptitude and interest in composition, and who are willing to undertake the thorough training necessary to qualify for writing articles for publication. *One recitation credit, first term. Elective for Juniors in Home Economics, and offered as an option in place of English IX for Juniors in Agriculture, Applied Science, and Engineering, subject to the approval of the Department.*

XV. Advanced Composition.—This course is planned to meet the needs and special interests of college women in advanced composition. *Prerequisite: English I. One recitation credit, first term. Required of Sophomores in Home Economics.*

Geology

PROFESSOR BROWN.

Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to those charac-

teristics of rocks which are of chief importance in connection with road construction.

Subjects

I. Geology.—*Two recitation credits, second term. Required of Juniors in Civil Engineering and Sophomores in Agriculture and Applied Science, and of first-year students, Education Course, Science and Agricultural options.*

History

PROFESSOR CHURCHILL.

In general, the purpose of the courses in History is to give students such an acquaintance with the political, social, and industrial background of present-day American life as will give them an appreciation of the institutions and ideals of this country and qualify them for more efficient citizenship.

Subjects

I. Industrial History.—As now conducted, this course provides a rapid survey of industrial conditions in Europe, particularly in England, previous to the settlement of America, followed by a study of the development of social, economic, and industrial life in the United States down to the present time. *Three recitation credits, second term. Required of all Juniors not in Reserve Officers' Training Corps, and of first-year students in Teacher-Training Course in Home Economics.*

II. Civics.—A study of the Federal Constitution, of the rise and development of political parties, and of the principal doctrines and policies of the United States Government down to the present time. *Two recitation credits, second term. Offered as an option in place of English III for Sophomores in all courses.*

III. Modern European History.—In this course the emphasis is on the causes, events, and results of the World War. In order to furnish an adequate background for the appreciation of these facts, however, the course begins with a study of the French Revolution and the Napoleonic era, and, with emphasis on the growth of democratic ideas, traces the social and political development of the leading countries of Europe down to the present time. *Three recitation credits, first term. Required of Sophomores in all courses and of first-year students in Education Course, Home Economics option.*

Home Economics

PROFESSOR EDWARDS, PROFESSOR PEPPARD.

Subjects

Ia. Garment Making.—Instruction and practice in hand and machine sewing, pattern making, adaptation of commercial patterns applied to making undergarments and simple wash dresses. The study of the development of the textile industry, manufacture of fabrics, and of woman's place in industry with reference to clothing and textiles. *One lecture credit, two and one-half laboratory credits, first term. Required of Freshmen in Home Economics, and in Education Course in Home Economics.*

Ib. Garment Making.—Continuation of Home Economics Ia.—*One lecture credit, two and one-half laboratory credits, second term. Required of Freshmen in Home Economics and in Education Course in Home Economics.*

III. Hygiene.—Presentation of the factors that make for healthy bodies and sound nerves. A readjustment of habits to meet the conditions of group and community life. *One recitation credit, first term. Required of all women, Freshman year.*

IVa. Foods.—Sources, manufacture, and chemical composition of foods and the relation of the principles of chemistry, physics, biology, and bacteriology to the cookery processes and digestion of foods; selection and combinations of foods, their comparative nutritive and economic values and their place in the diet. *Three laboratory credits, first term. Prerequisite: Chemistry I and II. Required of all Sophomores in Home Economics, and of first-year students in Education Course, Home Economics option.*

IVb. Foods.—Continuation of Home Economics IVa. *Three laboratory credits, second term. Required of all Sophomores in Home Economics.*

VII. Sanitation and House Planning.—Study of location of the house, heating, lighting, water supply, plumbing, and care of the house with reference to health, convenience, and cost. Public sanitation as it relates to the household is considered. Evolution of the house, its adaptation to modern conditions, principles involved in planning, furnishing and decorating the house from the standpoint of convenience, economy, health, and art. *Three recitation credits and one laboratory credit, first term. Required of Juniors in Home Economics, in Teacher-Training Course in Home Economics, and of Second-year students in Education, Home Economics option. Prerequisite or parallel: Art. VIII.*

VIIIa. Dietetics.—Nutritive value of foods and the daily food requirements; dietary studies based on family budgets of varying incomes; the making of menus and preparation of meals. The study of digestion and metabolism under conditions of health; and dietary needs as influenced by age, growth, and activity. *Two recitation and one laboratory credits, first term.*

Prerequisites: Chemistry IV, Zoölogy X, Home Economics IV. Required of Juniors in Home Economics and in Teacher-Training Course in Home Economics.

VIIIb. Dietetics and Child Care.—A study of diet under abnormal conditions, followed by a consideration of infant and child care, with emphasis on nutritional problems. *Two recitation credits, one laboratory credit, second term. Required of Seniors in Home Economics and Teacher-Training Course in Home Economics. Prerequisite: Home Economics VIIa.*

IX. Home Economics.—The purpose of the household, development, relation to industry, state, municipality and other social institutions; keeping of budgets and household records. *Three lecture periods, second term. Required of Juniors in Home Economics and in Teacher-Training Course in Home Economics, and of Seniors in Education Course, Home Economics option.*

XII. Home Nursing.—Suitable furnishing and arrangement for the sick room; care of patient—bathing, moving, feeding, etc.; first aid and emergency measures; hygiene of infectious and contagious diseases. *One recitation and one laboratory credit, second term. Required of Juniors in Home Economics, in Teacher-Training Course in Home Economics, and of second-year students in Education Course, Home Economics option.*

XVIIIa. Dressmaking.—Consideration of quality, suitability, and cost of materials used in making simple wool and silk dresses. Adaptation of art principles in selection of designs. *Two laboratory credits, first term. Required of Sophomores in Home Economics and of second-year students in Education Course, Home Economics option. Prerequisites: Home Economics Ia and Ib.*

XVIIIb. Continuation of XVIIIa. *One recitation and two laboratory credits, second term. Required of Juniors in Home Economics, and in Teacher-Training Course in Home Economics, and of second-year students in Education Course, Home Economics option.*

XXI. Home Administration.—Work in a Practice Cottage.—Application of principles of scientific management in the furnishing and care of home, planning and executing daily and weekly routine for group of six, division of income and making of budgets; planning and serving meals on given cost, and consideration of service for simple and more formal occasions. *Three laboratory credits, first term. Required of Seniors in Home Economics, and in Teacher-Training Course in Home Economics. Prerequisite: Home Economics VIIa, IX.*

XXV. Costume Design.—A study of principles of design and their application to dress. Study of form, line and color combinations in their relation to the individual. Practice in handling and draping fine material. Study of color and textiles as related to different types of hat and the making and

trimming of these types. *Three laboratory credits, second term. Required of Seniors in Home Economics, and in Teacher-Training Course in Home Economics. Prerequisite: Home Economics, XVIIIb; Art. IX, prerequisite or parallel.*

XXVI. Textiles and Clothing Economics.—Artistic and economic considerations in selection and purchase of materials for clothing and household furnishings, with emphasis on identification of textile materials, as to price, width, and weave; economic and social conditions which affect their value. Study of clothing budgets. *Two laboratory credits, first term. Required of Seniors in Home Economics, and in Teacher-Training Course in Home Economics. Prerequisites: Home Economics Ia and Ib.*

XXVII. Applied Household Mechanics.—The construction, care and use of the various pieces of machinery used in the home for heating, lighting, ventilating, cleaning, cooking and sewing. *One lecture and one laboratory credit, second term. Required of Sophomores in Home Economics, and of first-year students in Education Course, Home Economics option.*

XXVIII. Catering.—Cooking for special occasions.—Afternoon teas, receptions, c'ubs, parties, buffet lunches, banquets. *Three laboratory hours, second term. Elective for Juniors or Seniors.*

XXIX. Lunch-Room Cookery.—Cookery; marketing; buying; menu planning; service; supervision; accounting; equipment; field work service. *Three laboratory hours, second term. Elective for Juniors or Seniors.*

Mathematics

PROFESSOR TYLER, ASSISTANT PROFESSOR BILLS.

Subjects

I. College Algebra.—*Four recitation hours, two and one-half credits, nine weeks, first term. Required of Freshmen in Engineering and Applied Science and of first-year students, Education Course, Science option. Professor Tyler, Assistant Professor Bills.*

II. Trigonometry.—*Four recitation hours, two and one-half credits, nine weeks, first term. Required of all Freshmen except Home Economics students, for whom it is optional; also required of first-year students, Education Course, Science and Agricultural options. Professor Tyler, Assistant Professor Bills.*

III. Higher Algebra.—*Five recitation hours, two and one-half credits, nine weeks, first term. Required of Freshmen in Agriculture and of first-year students, Education Course, Agricultural option, and optional for students in Home Economics. Assistant Professor Bills.*

VIIIa. Trigonometry completed and Analytics.—*Five recitation credits, second term. Required of Freshmen in Engineering and of first-year students, Education Course, Science option. Professor Tyler, Assistant Professor Bills.*

VIIIb. Trigonometry completed and Elementary Analysis.—*Four recitation credits, second term. Required of Freshmen in Applied Science.* Assistant Professor Bills.

X. Calculus.—*Five recitation credits, first term. Required of Sophomores in Engineering.* Professor Tyler.

XI. Calculus (completed).—*Five recitation credits, second term. Required of Sophomores in Engineering.* Professor Tyler.

XIV. Spherical Trigonometry.—*One recitation credit, first term. Elective as an extra.*

XV. Solid Analytics.—*One recitation credit, second term. Elective as an extra.*

Military Science and Tactics

CAPTAIN A. S. KNIGHT, INFANTRY.

CAPTAIN JOSEPH CHURCH, INFANTRY.

All male college students are required to take military instruction during the first two years unless exempted because of physical disability. During this period they are enrolled in the Reserve Officers' Training Corps. During the Junior and Senior years, the Advanced Course, R. O. T. C., may be taken. Students who satisfactorily complete the Advanced Course are offered commissions in the Officers' Reserve Corps and may qualify for commissions in the Regular Army.

The primary object of the Reserve Officers' Training Corps is to qualify, by systematic and standard methods of training, young men for Reserve Officers of the United States Army. The system of instruction as prescribed presents to the students a standardized measure of that military training which is necessary in order to prepare them to perform intelligently the duties of a commissioned officer in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers.

Under the provisions of the National Defense Act of June 3, 1916, as amended, and published in Special Regulations No. 44, War Department, 1920, any student who has completed two academic years of service in the Reserve Officers' Training Corps and has been selected for further training by the President of the institution and its Professor of Military Science and Tactics and who has agreed in writing to continue said course for the remainder of his period in

college, devoting five hours per week to the prescribed military training, and who further agrees to take the prescribed camp training, may be furnished with an allowance for subsistence amounting to about forty cents a day.

Subsistence while in camp and railroad fare to and return will be paid by the United States. Extra articles of uniform necessary for camp will also be furnished.

When a unit of the Reserve Officers' Training Corps has been established at an institution, the Quartermaster Corps of the Army shall issue or provide one complete olive drab regulation uniform for each student undergoing instruction. It is also the policy of the War Department to issue for each unit of the R. O. T. C. the latest model rifles and equipment, in so far as the supply and the appropriations of Congress permit.

This has already been done to the extent of supplying the college with the model 1903 (Springfield) rifle, complete infantry equipment, two Browning Machine Guns, eight Browning Automatic Rifles. one 37 m.m. Gun, and one light mortar. This is the type of arms and equipment used by the Regular Army today.

UNIFORM: The following articles of uniform clothing will be issued by the Quartermaster Corps of the Army, free of charge, to each student enrolled in the R. O. T. C.:

- 1 Coat, Service, O. D.
- 1 Breeches, woolen O. D.
- 2 Shirts, flannel, O. D.
- 1 Leggings, wool, spiral, pairs.
- 1 Cap, Service, or Overseas.
- 1 Belt, waist.
- 1 Necktie, black.
- 1 Ornament, cap.
- 2 Ornaments, collar.
- 1 Shoulder insignia, woolen, R. O. T. C.

This uniform must be worn at all military instruction and will be worn at other times as directed. The wearing of clothing part uniform and part civilian is prohibited. Articles lost or unnecessarily worn or damaged must be replaced by the student at his own expense. This uniform remains the property of the United States and must be

turned in by the student during the summer vacation and upon withdrawing from college.

Subjects

I. Military Art.—Practical.—(a) *First Year*: Physical Training; Infantry Drill (U. S. Infantry Drill Regulations), to include School of the Soldier, Squad, Platoon, and Company, close and extended order. Rifle Marksmanship; Nomenclature of Rifle and Equipment; Ceremonies; Scouting and Patrolling; Interior Guard Duty; Visual Signaling. (b) *Second Year*: Same as (a) with following added: Musketry, Combat Firing of the Squad, Section and Platoon as a unit; Map Reading and Military Sketching; the Automatic Rifle, mechanism and employment; Bayonet Combat; Hand and Rifle Grenades, construction and employment; Sanitation and First Aid; Firing for record with Rifle and Auto Rifle. (c) *Third Year*: Duties consistent with rank as cadet non-commissioned officers and officers in connection with (a) and (b); the Browning Machine Gun, mechanism and employment; the 37 m.m. Gun, mechanism and employment; the Light Mortar, mechanism, and employment; Field Engineering. (d) *Fourth Year*: Drill and Command, with student Battalion; Tactics, to include the Battalion; Military History; Company Administration; Pistol marksmanship. *Two exercises of one hour each, counting as one credit for each term. Required of all male Freshmen and Sophomores, and all Juniors and Seniors taking the advanced course in the Reserve Officers' Training Corps.*

II. Military Art.—Theoretical.—*First Year*: (Basic): Military Courtesy; Military Organization; Service of Information; Service of Security; Rifle Marksmanship; Combat, (demonstrations). *One recitation credit throughout the year. Required of all male Freshmen.*

IV. Military Art.—Theoretical.—*Second Year*: (Basic): Infantry Drill Regulations, to include School of the Battalion; Combat Organization; Rifle and Auto Rifle Marksmanship; Musketry; Map Reading; Service of Security; Reconnaissance; Functioning of the Automatic Rifle; Military Explosives; Military Hygiene and Sanitation. *One recitation credit throughout the year. Required of all male Sophomores.*

V. Military Art.—Theoretical.—*First Year*: (Advanced): The Browning Machine Gun, Functioning, Direct and Indirect Fire; Command; 37 m.m. Gun, Functioning, Direct and Indirect Fire; the Light Mortar, Functioning and Tactics; Field Engineering; Military Law; Rules of Land Warfare. *Three recitation credits throughout the year. Required of all Juniors in the R. O. T. C.*

VI. Military Art.—Theoretical.—*Second Year*: (Advanced): Command; Tactics, to include the Battalion (terrain exercises, map problems, war games); Military History of the United States; Company Administration; Pistol Marksmanship. *Three recitation credits throughout the year. Required of all Seniors in the R. O. T. C.*

Modern Languages

PROFESSOR JAECK.

FRENCH

I. Elementary French.—Grammar, dictation, pronunciation, composition, conversation, reading of easy prose and poetry. *Three recitation credits thruout the year.*

II. Intermediate French.—Reading, composition, conversation, first semester; Introductory Scientific French, second semester. *Three recitation credits thruout the year.*

III. Advanced Scientific French.—*Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Literary French.—Critical study of literary masterpieces both modern and classical. *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

GERMAN

I. Elementary German.—Grammar, dictation, pronunciation, composition, reading of easy texts in prose and poetry. *Three recitation credits thruout the year. Required of students in Applied Science when German is not offered for entrance.*

II. Intermediate German.—Reading, composition, conversation, first semester; Introductory Scientific German, second semester. *Three recitation credits thruout the year. Required of Sophomores in Applied Science.*

III. Advanced Scientific German.—*Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Literary German.—Critical study of literary masterpieces both modern and classical. *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

SPANISH

I. Elementary Spanish.—Grammar, dictation, pronunciation, composition, conversation, reading of easy texts in prose and poetry. *Three recitation credits thruout the year.*

II. Intermediate Spanish.—Reading, composition, conversation, first semester; Industrial and Commercial Spanish, second semester. *Three recitation credits thruout the year.*

III. Modern Spanish Literature.—Critical study of modern masterpieces in the drama and novel. *Three recitation credits thruout the year. Elective for students who have completed I and II or their equivalents.*

IV. Classical Spanish Literature.—*Three recitation credits thruout the year. Elective for students who have completed I, II, and III or their equivalents.*

ITALIAN

I. Elementary Italian.—Grammar, dictation, pronunciation, composition, reading of modern texts in prose and poetry. *Three recitation credits thruout the year. Elective for students who have presented the requisite two units of modern language for entrance and who have had in addition at least one year of modern language in College.*

II. Classical Italian Literature.—Critical study of literary masterpieces of the classical period. *Three recitation credits thruout the year. Elective for students who have completed I or its equivalent.*

Music

ASSISTANT PROFESSOR PECK.

V. History and Appreciation of Music.—A course intended to develop an appreciation for good music and an understanding of the most important music forms. *Two recitation credits, first term. Option for Freshmen in Home Economics and elective for all students.*

VI. History and Appreciation of Music.—A continuation of Course V. *Two recitation credits, second term. Elective for all students. Either semester may be elected separately, since the second semester does not depend upon the first.*

Physics

PROFESSOR ANDERSON, ASSISTANT PROFESSOR COGGINS.

Physics is regarded as a fundamental science, a mastery of which is essential to success in engineering or in any calling involving the application of scientific methods and processes. Therefore emphasis is placed upon the practical applications of the principles involved, not only for the purpose of affording preparation for future work, but with the idea of stimulating the student to an interest in his professional work.

At the same time, some effort is made to present the subject from the standpoint of a pure science, and to instill in the student a respect for scientific methods, and to prepare him for advanced work in research and investigation. Advanced mathematics is employed, wherever its use is deemed necessary for a rigorous and complete development of the subject.

Instruction is given in both class-room and laboratory, the two

methods being closely correlated. The department is equipped with many pieces of high-grade apparatus. In mechanics, special attention is given to problems involving mass, force, motion, and energy.

In the laboratory of heat measurements, the problems involved in the transformation of heat into energy are strongly emphasized.

In light, the department is able to carry on work of the usual college grade, being well equipped with high-grade photometers, spectrometers, etc.

The laboratory of electrical measurements is particularly well equipped for the carrying on of work in this line.

Subjects

I. Descriptive Physics.—Designed for students in Agriculture and Home Economics. The subject furnishes an excellent foundation for further work in physics. *Five recitation credits, second term. Required of Sophomores in Agriculture, Applied Science, and Home Economics, and of second-year students, Education Course, Agricultural option.*

II. General Physics.—A mathematical treatment of the subject, in which a knowledge of elementary physics is presupposed. *Four recitation credits, thruout the year. Required of all Sophomores in Engineering, and of second-year students, Education Course, Science option.*

III. Laboratory Physics.—A series of physical measurements intended to teach students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits, thruout the year. Required of Sophomores in Engineering, and of second-year students, Education Course, Science option.*

V. Electrical Measurements.—A laboratory course in electrical measurements in which instruments of precision are used. The study of such instruments as the potentiometer and its use in the calibration of ammeters and voltmeters, the Decade Box Bridge, Kelvin Double Bridge, and the measurement of the capacity of condensers and self-induction of coils. *One and one-half laboratory credits, first term. Required of Seniors in Electrical Engineering.*

VI. Principles of Illumination.—A study of different sources of light, photometrical measurements, and the principles of illuminating engineering. *One recitation credit and one and one-half laboratory credits, first term. Required of Seniors in Electrical Engineering.*

Physical Education

DIRECTOR KEANEY, MRS. KEANEY.

The aim of the department of physical education is to give those

students taking work in the department such scientific physical training as to best develop a normal body. Every student in the institution is required to take at least two hours' work per week in physical training.

Recent events have shown the great need of better physical development among the youth of our country, together with more scientific and thoro application of the methods of physical education in our American colleges. During the past year, this college has required practically every student to take regularly some form of physical training.

The following lines of activity will be conducted :

Football.—Commencing with the opening of the College year in September and continuing until the latter part of November and during the last six weeks of the College year, work will be conducted in this sport. Aside from the Varsity team, class teams will be developed. All male students are urged to take part in this work.

Basketball.—Following the close of the football training in November, basketball work will be commenced and will continue until the latter part of March. Varsity and class teams will be developed as in football.

Baseball.—Work in baseball is commenced with practice in the gymnasium the middle of February and will continue with outdoor work when weather permits until the end of the college year. Varsity and group teams will be developed.

Boxing.—This form of exercise requires a rigorous course in calisthenics to develop and strengthen the entire physique.

Cross Country.—Cross country work will be started in the Fall and continued until the Thanksgiving recess. The country surrounding the college is ideal for this line of work, which should prove of interest to many students.

Track.—Training in track work will begin on the board running track after the Christmas holidays and will be continued on the cinder track in the spring as weather permits. Some form of track athletics should be participated in by all male students.

Physical Training.—A.—For men.—Carefully planned work in physical training for the individual is conducted thruout the year. *One credit, covering two hours per week, is required of all students during attendance at college.* Work in the above sports may be accepted at the discretion of the physical director. Each student will be required to obtain a suit as prescribed by the director.

Physical Training.—B.—For women.—All women students are required to take gymnasium work unless excused by a physician's certificate. The uni-

form for the work consists of a pair of black wool bloomers, a white middy blouse with black tie, black stockings and white gymnasium shoes. *One laboratory credit thruout the year. Required of all women students.*

Psychology and Education

PROFESSOR CARROLL, PROFESSOR BIRD, MR. ABBOTT.

I. History of Education.—A study of the growth of American educational institutions and practices with the purpose of giving a view of present-day problems in the light of their historical evolution. Sufficient attention is given to the history of education in Europe to indicate influences affecting American developments.

Following the general course in the history of education the last third of the term is given to the special history of the educational movement in the line of work in which the student is specializing:

- a. Agricultural Education (see Vocational Education I).
- b. Home Economics (to be arranged).
- c. Science (to be arranged).

Three recitation credits, second term. Required in Applied Science, Home Economics and Teacher-Training Courses. Mr. Abbott.

II. Principles of Secondary Education.—The secondary school involving a study of its general character and purpose, the school population, the materials of instruction, methods and management. *Three recitation credits, first term. Required in Applied Science, and in Teacher-Training Courses.* Mr. Abbott.

III. Rhode Island Education.—A study of the educational movement in Rhode Island, together with the law of the State in relation to the schools. School Administration, School Finance, Professional Ethics, Organization of Vocational Education under Federal law. *Three recitation credits, second term. Required in Agriculture, Applied Science, and in Teacher-Training Courses.* Professor Carroll.

IV. Educational Psychology.—Functions of mental life; simple experiments. *Three recitation credits, first term. Required in Applied Science, Home Economics, and Teacher-Training Courses.* Professor Bird.

V. Educational Psychology.—A study of individual and group behavior in relation to the learning process; the nervous system as the organ of behavior, educational significance of unlearned tendencies to action, the functions of feeling, habit, imagination, and rational thinking in conduct, economy in securing retention of ideas, pedagogical applications of the psychology of attention and interest, conditions necessary for effective thinking. Lectures, discussions and simple experiments. *Three credits, second term. Elective in Applied Science, Home Economics, and Teacher-Training Courses.* Professor Bird.

VI. Educational Psychology.—The psychology underlying principles of teaching with special reference to secondary subjects, school athletics and clubs, the use of educational and intelligence tests and measurements, methods of detecting vocational aptitudes. *Elective. One credit, second term.* Professor Bird.

Vocational Education

MR. ABBOTT, MRS. HARRINGTON.

The object of the subjects offered in Vocational Education is to provide the necessary professional training for students in the Departments of Agriculture and Home Economics who are preparing themselves to teach these vocational subjects in the schools of the State.

Subjects

I. History of Agricultural Education.—A survey of the rise and development of elementary, secondary and collegiate agricultural education thruout the United States. *Three recitation credits, last six weeks, second term, Junior year.* For the work of the first twelve weeks of the term, see Psy. and Ed. I. *Required of students in Agricultural Teacher-Training Course.* Mr. Abbott.

II. Practice Teaching Agriculture.—Practical class-room experience in the conducting of recitations and laboratory work in Secondary Agriculture under supervision. *Three recitation credits, first or second term, Senior year. Required of students in Agriculture Teacher-Training Course.* Mr. Abbott.

IV. Special Methods in Agriculture.—A study of the Smith-Hughes Law in so far as it relates to Vocational Agricultural Education. Preparation and presentation of the subject matter in the class-room and laboratory. Arranging courses of study, preparation of lesson plans, conducting of field trips and supervision of Home Project Work. *Three recitation credits, second term, Senior year. Required of students in Agriculture.* Mr. Abbott.

V. Teaching Home Economics.—A study of methods, curricula, and equipment, and the making of lesson plans; observations and criticisms followed by supervised teaching. *One recitation and one laboratory credit, first term. Elective for Seniors in Home Economics, and required of Seniors in Teacher-Training Course, Home Economics option.* Mrs. Harrington.

Zoology

PROFESSOR BARLOW, MISS HUGHES.

The work in this department is designed to meet the needs of two classes of students: those who are interested in the economic aspect

of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic aspects of the different orders. Much time is given to entomology, and in this subject special attention is given to injurious forms. For those who are to be teachers, a thoro training is given in the morphology and classification of animals as a preparation for the more special subjects that follow. In these, attention is directed to the habits and relations of animals, which are studied both in the field and in the laboratory.

The laboratory is equipped with a series of charts, valuable models, and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about one hundred cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes. The necessary instruments for laboratory work can be procured at small cost at the college store.

Subjects

I. Invertebrate Zoölogy.—A subject in the morphology and classification of invertebrates. *Given in alternate years; next given in 1924. One recitation and three laboratory credits, second term. Option for Juniors and Seniors in Applied Science. Required of second-year students in Education Course, Science option.*

II. Limnology.—*Given in alternate years; next given in 1924. One and one-half laboratory credits, second term. Option for Seniors in Applied Science.*

IV. Economic Entomology.—*Three recitation credits and one laboratory credit, second term. Given in alternate years; next given in 1923. Option for Juniors in Agriculture and Applied Science.*

V. General Entomology.—*One recitation credit and two laboratory credits, first term; two recitation credits and two laboratory credits, second term. Elective for Juniors and Seniors in Applied Science.*

VI. Systematic Entomology.—*Three or five laboratory credits per week, thruout the year. Elective for those who have taken or are taking Zoölogy V.*

VIIIa. Histology.—The usual methods of imbedding and sectioning tissues and the study of the principal organs by these methods. *Three laboratory credits, first term. Option for Juniors and Seniors in Applied Science and Home Economics. Elective in Teacher-Training Courses. Given in alternate years; next given in 1922.*

VIIIb. Embryology.—Laboratory and text-book study of the development of vertebrates. *Two recitation credits and one laboratory credit, second term. Given in alternate years; next given in 1923. Required of second-year students, Education Course, Home Economics option. Option for Juniors and Seniors in Applied Science.*

IX. Ornithology.—Field studies of native birds. *One laboratory credit, second term. Elective.*

Xa. General Zoölogy. Introductory Course. Structure and physiology of type forms. *Two recitation and two laboratory credits, first term. Required of first-year students in Education Course, Home Economics and Science options; of second-year students in Education Course, Agricultural option, and of Sophomores in Agriculture, Applied Science, and Home Economics.*

Xb. Anatomy and Physiology.—The structure of higher vertebrates and human physiology. *Two recitation and two laboratory credits, second term. Required of first-year students in Education Course, Home Economics and Science options, of second-year students in Educational Course, Agricultural option, and of Sophomores in Agriculture, Applied Science, and Home Economics.*

XI. Assigned Work.—*Three credits thruout the year. Elective for Seniors in Applied Science and Agriculture.*

II. SHORT COURSE IN AGRICULTURE

To meet the needs of those who find it out of their power to undertake a four years' college course, but who, nevertheless, desire to increase their efficiency on the farm, the college offers what is known as a short course in agriculture. Students may with advantage take only a part of the course if unable to remain for the whole time.

It is required of applicants for this course that they be at least eighteen years of age at entrance, that they shall have completed at least the common school, that they shall have a definite purpose in mind in applying for the course, and *that within three weeks after entrance they shall satisfy their teachers that they are sufficiently mature, sufficiently earnest, and sufficiently capable to warrant their remaining for the course.* Every effort will be made to guard this course from becoming a refuge for the idle, the purposeless, and therefore the unsuccessful, and to that end drastic measures of elimination will be used whenever necessary, but especially at the end of the first three weeks of the year.

The course is in no case supposed to serve as a substitute for the

regular work of the college either in character or in scope of the subject-matter presented, and does not lead, directly or indirectly, to a degree, a certificate only being granted. Neither is it to be considered as preparatory to the college work. Its particular function is to give, in the shortest, most direct way possible, certain definite, specific, and perhaps uncorrelated information which will be of immediate value on the farm.

In order that seriousness of purpose as regards an agricultural occupation may be assured from those taking the agricultural short course, no student will be permitted to register for the second year's work who has not had at least six months' practical experience on a farm.. This experience should be obtained upon a farm making a specialty of the line of work which the student intends to follow.

The tabulated course follows:

First Year.

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Botany A—Plant Life.....	1[2½]	Botany A—Plant Life.....	1[2½]
Agronomy A—Soils and Fertilizers....	3	Agronomy A—Soils and Fertilizers....	3
An. Husb. B—Stock Judging.....	[1]	An. Husb. B—Stock Judging.....	[1]
An. Husb. A—Breeds.....	1	An. Husb. A—Breeds.....	1
An. Husb. H—Poultry.....	2[1]	An. Husb. H—Poultry.....	1[2]
Zoölogy A—Economic Entomology....	3	Hort. C—Plant Propagation.....	1[1]
Agronomy E—Farm Accounts.....	3	Agronomy E—Farm Accounts.....	3
Practical Work.....	[2½]	Practical Work.....	[2½]
Drill and Military Science.....	1[1]	Drill and Military Science.....	1[1]
Physical Training.....	[1]	Physical Training.....	[1]

Second Year.

FIRST TERM	CREDITS*	SECOND TERM	CREDITS*
Agronomy B—Farm Crops.....	3	Agronomy B—Farm Crops.....	3
An. Husb. C—Dairy Practice.....	1[3]	Hort. A—Vegetable Gardening.....	3[1½]
An. Husb. D—Feeding Animals.....	3	An. Husb. E—Principles of Breeding..	2[1]
Hort. B—Fruit Culture.....	3[1]	Hort. B—Fruit Culture.....	2[1]
An. Husb. G—Care of Animals.....	3	Agronomy F—Marketing Farm Products	2
Agronomy C—Farm Management.....	3	Agronomy D—Farm Machinery.....	1[2]
Practical Work.....	[2½]	Practical Work.....	[2½]
Drill and Military Science.....	1[1]	Drill and Military Science.....	1[1]
Physical Training.....	[1]	Physical Training.....	[1]

Subjects

AGRONOMY

A. Soils and Fertilizers.—An elementary course on the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Three recitation credits, first year.*

B. Crops and Rotations.—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various-types of farms. *Three recitation credits, second year.*

C. Farm Management.—An elementary course on the principles of farm management, equipment, cost of production. *Two recitation credits, first term, second year.*

D. Farm Machinery.—Care and repair of farm implements. *One recitation and two laboratory credits, second term, second year.*

E. Arithmetic and Farm Accounts.—A review course in arithmetic. Types of farm accounts, inventories, project accounts, complete set of farm accounts, special production records. *Three recitation credits, first year.*

F. Marketing of Farm Products.—Kinds of markets, methods of sale, standardization of products, co-operative associations for marketing. *Two recitation credits, second term, second year.*

ANIMAL HUSBANDRY

A. Types and Breeds.—Breeds of horses, cattle, sheep, and swine. Emphasis is placed on the type best fitted to the agriculture of New England. *Two recitation credits, first term; one recitation credit, second term, first year.* Professor Ladd.

B. Stock Judging.—Scoring of individuals and judging the various classes of animals and their adaptability to different purposes, as cattle for milk or beef production, horses for driving or draft. *One laboratory credit, first year.* Professor Ladd.

C. Dairy Practice.—Babcock test for dairy products, production of sanitary milk, and butter making. *One recitation and three laboratory credits, first term, second year.* Assistant Professor Burdick.

D. Principles of Feeding.—Compounding rations. *Three recitation credits, first term, second year.* Professor Ladd.

E. Principles of Breeding.—A study of the selection of animals, heredity, and variation. *Two recitation credits and one laboratory credit, second term, second year.* Professor Ladd.

G. Live Stock Care and Sanitation.—Housing, care, and management of farm animals. Practical directions for handling of stock on the farm. *Three recitation credits, first term, second year.* Professor Ladd.

H. Poultry Keeping.—Study, demonstrations, and work in all of the practical branches of the poultry department. *Two recitation credits and one laboratory credit, first term; one recitation and two laboratory credits, second term, first year.* Mr. Brett.

HORTICULTURE

A. Vegetable Gardening.—Fundamental principles of vegetable growing. Practical work in cold frames, hotbeds, and garden planting. *Three recita-*

tion credits, and one and one-half laboratory credits, second term, second year.

B. Fruit Culture.—Study of fruits; propagation; planting fruit gardens and plantations; harvesting and packing; care, including methods used in combating insect pests and plant diseases. Preparation and application of fungicides and insecticides. Study of nozzles, pumps, etc. *Three recitation credits and one laboratory credit, first term; two recitation credits and one laboratory credit, second term, second year.*

C. Propagation of Plants.—A study of the different methods of plant propagation. *One recitation and one laboratory credit, second term, first year.*

BOTANY

A. Plant Life.—Elementary agricultural botany.—*Two and a half laboratory credits and one recitation credit, thruout the year, first year.*

ZOOLOGY

A. Elementary Economic Zoölogy.—Injurious insects are chiefly studied. *Three recitation credits, first term.*

Military Science and Tactics

All male students are required to take military instruction during the first two years unless exempted by reason of physical disability. During this period they are enrolled in the Reserve Officers' Training Corps. List of subjects covered in R. O. T. C. course is given elsewhere in this catalog.

I. Military Art.—Practical.—(a) *First Year.* Physical drill; Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad, Company, and Battalion in close and extended order; preliminary instruction in sighting and aiming drills; gallery practice; nomenclature and care of rifle and equipment; ceremonies; manuals; bayonet combat; intrenchments; first-aid instruction; target practice. (b) *Second Year.* Same as (a) combat and collective firing on outdoor ranges if possible; signaling; work with sand table. *Two exercises of one hour each, counting as one credit for each term.*

II. Military Art.—Theoretical.—*First Year.* Theory of target practice, military organization; service of information; service of security; map reading; lectures on general military policy as shown by military history of the United States and military obligation of citizenship; combat (to be illustrated by small tactical exercises); Infantry Drill Regulations, to include School of the Company; camp sanitation for small commands; personal hygiene. *One recitation credit thruout the year.*

IV. Military Art.—Theoretical.—*Second Year.* Infantry Drill Regulations, to include School of Battalion and Combat; Small Arms Firing Regulations; lectures as in II; map reading; marches and camps; camp sanitation and camp expedients; military history (recent); service of security and information (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping). *One recitation credit thruout the year.*

PHYSICAL EDUCATION

The aim of the department of physical education is to give those students taking work in the department such scientific physical training as to best develop a normal body. Every student in the institution is required to take at least two hours' work in physical training.

PRACTICAL WORK

Every student enrolled in the agricultural short course is required to perform at least five hours of practical work each week. The object of this work is to develop good practice as well as theory. No pay is given for this work, and neglect to properly perform the assigned tasks will be considered as sufficient ground to debar the student from the institution. Written reports are required covering all phases of the work undertaken.

At the beginning of the year the student is allowed to choose work along the line in which he is particularly interested.

Work may be elected in any of the following lines: Care of Dairy Cattle, Calves, Sheep, Poultry, Orchard Management, Greenhouse work with Vegetables or Flowers.

MISCELLANEOUS INFORMATION

Expenses

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is \$25.00 a term, or \$50.00 a year. Students who apply for admission as non-residents will be expected to pay tuition thruout their course unless there is a bona-fide change of residence of the parent or guardian.

The regular college expenses are tabulated as follows :

Board, \$6.00 per week (subject to change without notice).....	\$216 00
Room-rent, including heat and light.....	40 00
Incidental fee, \$5.00 per term.....	10 00
Student tax for Beacon, outside lectures, athletics, etc.....	10 00
Laboratory expense, \$5.00 per term, estimated.....	10 00
	<hr/>
	\$286 00

The first four items must be paid quarterly in advance; that is to say, from boarding students, \$60.00 will be required at the opening of the year, September 20, 1922, and on November 20, 1922; also at the opening of the second term February 13, 1923, and again April 17. Non-residents of the state should add to this sum \$12.50 for tuition each quarter. Day students will be required to make a deposit of \$5.00 for laboratory expense together with the incidental fee and student tax, making a quarterly payment of \$10.00 in advance on the above dates. In order to secure dormitory accommodations, the student is required to deposit \$10.00 with the application, the amount to be credited on the room rent for the first quarter. If the student fails to take the room, the deposit is forfeited. During vacations dormitories and fraternity houses will not be open for occupancy except under special arrangements with the college office. In such case, a higher rate for room rent will be charged, such rate to be adjusted on individual application. During 1921-22, the students assessed themselves an additional \$10.00 for student tax covering various activities, making a total of \$20.00. The item of laboratory expense includes all material used in the various laboratories, and the destruction, breakage, or marring of apparatus and tools, and must

be paid when bill is presented at the close of each term. A special fee of one dollar per day will be charged for registration after the first day of each term; and also for absence immediately preceding or following a holiday or vacation.

The probable cost of books will be from \$30.00 to \$50.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from \$10.00 to \$25.00. A fee of 50 cents will be charged for each second examination to make up a condition. Graduates pay the cost of diplomas, \$5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter.

TRANSPORTATION.—The college conveys day-students to and from the railroad station free of charge. Once at the beginning and end of each term, trunks will be conveyed to and from the station for students living in dormitories under college control.

BOARDING STUDENTS.—The deposit for board for 1921-22 is at present fixed at \$6.00 per week. At the end of each term, the student will be charged, pro rata, the cost of board in excess of deposit or, if the cost falls below deposit, a rebate will be allowed. Owing to the uncertainty of prices for all forms of provisions and labor, the right is reserved to make change in the rate of board at such times as may appear necessary to do so. It is, however, guaranteed that board will be furnished students at cost. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the use of such ticket. No rebate will be allowed except by special permission for absence over a considerable period because of illness or other serious cause. Arrangement of charges for meals to students' room for any cause must be made in advance. Arrangements for room or board outside of the College must be approved by the executive office. Students are not allowed to board themselves in the dormitories.

CASES OF ILLNESS.—Arrangements for ascertaining and handling cases of illness are as follows: Each floor of the dormitory and each house has a student officer, called a monitor, appointed and paid by the college. A part of his duties is to report cases of illness. The room-mate also reports such illness to the student head-waiter in the dining room, who sends the meal to the room, for which a

charge of fifteen cents is made, and reports his action to the office, where such action is taken in consultation with the college physician as seems advisable. A small hospital room is maintained, to which a patient may be moved, and in which he may have entire quiet and such care and attention as may be required.

MEDICAL SERVICE.—Because of the necessity for systematic medical supervision of the students, a college physician has been appointed. An effort has been made to model the service after that of the most progressive universities, with certain modifications to fit local needs. Here at Kingston, the work comes at present under three heads: 1. The care of the sick. 2. A systematic examination of students with a view to giving any needed advice, and the keeping of permanent records of their condition. 3. The making of examinations for different branches of the Government service.

DORMITORIES FOR MEN.—East Hall affords excellent accommodations for men students. The two upper floors are entirely devoted to rooms for students. The sanitary conveniences on each floor are ample, including a full complement of shower baths. The first floor contains a social room for the men, two dining-rooms with capacity for one hundred and fifty students each, and a kitchen with good equipment.

Some of the college fraternities have erected buildings of their own, while others occupy houses rented by the college in the village of Kingston near by.

Dormitories will be open for occupancy on Monday, September 18, 1922.

DORMITORIES FOR WOMEN.—The college maintains two dormitories for women, Davis Hall and South Hall, accommodating about fifty students. Each dormitory is supervised by a faculty member and every possible care is taken to guard the health and safety of the young women. Much attention is given to the social life among them. The dining-room for the women is in South Hall.

A practice house for home economics students has also been rented in the village.

FURNITURE.—The rooms in the women's dormitories are provided with necessary furniture, including mattresses, but no other bedding

material. *All students in the men's dormitories are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from \$8.00 to \$10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold when the student leaves, for one-half to three-fourths the original price. All students should bring with them such articles as sheets, blankets, pillow, pillow-slips (all for single bed), and towels. Men students are required to purchase mattresses at the college.

ROOMS IN THE VILLAGE.—Furnished rooms in private houses for students who occupy them thruout the college year range from \$1.25 to \$2.50 per week. Arrangements for such rooms should be made by the individual, who may procure lists of available rooms at the college office.

COLLEGE STORE.—Students will be required to pay cash at the store for all books and other supplies.

DAMAGE FUND.—All damage not due to ordinary wear will be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.
2. Students found guilty of such damage, but not acknowledging and settling for the damage will be charged double the cost of repair.
3. Students will be responsible for damage in their own rooms. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Religious Influences

This college is a state institution, and consequently, the widest latitude is given to all creeds and forms of religious belief. Simple assembly exercises are held on one day of each week and are conducted by the president or some other member of the faculty. It is required that students attend assembly.

A branch of the Intercollegiate Young Men's Christian Association is doing active work among the men students.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and if possible to join its membership. Churches of various denominations in Wakefield, four miles distant, welcome our students. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

The College Lecture Association

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to provide both musical and literary entertainments. The association may be looked upon as a permanent and important factor in college activities.

Equipment

FARM AND CAMPUS.—The landed property of the college has a total area of 170 acres. About forty-one acres of this area are devoted to buildings, lawns, and athletic grounds; nine acres are in forest; and six are being developed as an arboretum. Thirty-five acres are used for the field investigations of the experiment station, which are valuable object lessons in agricultural instruction. The remainder is used for garden and orchard, and for raising crops for the live stock. The total value of land, buildings, and equipment is over \$500,000.

AGRICULTURAL BUILDINGS.—The agricultural buildings consist of a commodious dairy barn with laboratories for instruction in farm dairying and milk testing; a horse barn of modern construction; a greenhouse with an area of 10,000 square feet; a building attached to the greenhouse for class work in agronomy and horticulture; a group of buildings used for instruction and experimentation in poultry raising; and the new Hall of Agriculture, equipped and first opened for class-room instruction in September, 1921. This building, besides making ample provision for the agricultural department, also provides commodious quarters for the Administrative Offices, the Extension Department, and the departments of modern languages, English, and history.

ENGINEERING BUILDINGS.—The engineering department is equipped with modern machine, forge, and pattern-making shops, located in a building known as Ladd Laboratory. In Lippitt Hall, a granite building, 134 by 40 feet, are housed the lecture rooms, drawing rooms, testing rooms, and engineering laboratories of the department. A boiler house and a dynamo room, from which heat, power, and light are furnished for the various buildings, are a part of the engineering outfit, for practical instruction and for experimentation in electrical and steam engineering.

SCIENCE HALL.—This building was first occupied in October, 1913. It consists of three stories and a basement, measures 154 by 60 feet, and is built of native granite. Here are housed the departments of chemistry, physics, zoölogy, bacteriology, and botany. Each department is provided with commodious laboratories, recitation room, and department library room. An amphitheatre having a seating capacity of 150 and provided with suitable projection apparatus, serves for the common use of the various departments requiring such a room.

HOME ECONOMICS LABORATORIES.—The special laboratories of this department are located in Davis Hall and in a small building near it.

TAFT LABORATORY.—The laboratories and offices of the experiment station are housed in a granite building known as Taft Laboratory.

DRILL HALL AND ATHLETIC HOUSE.—The drill hall, a room 134 by 40 feet, located in Lippitt Hall, is used both as an armory and as a gymnasium. A dressing room and bath room are attached to the hall. An athletic house provided with bath and dressing rooms for out-of-door sports is located at the athletic field, which is equipped with cinder track and straightaway for track athletics. Tennis courts for both men and women are also provided.

The Library

The library occupies two large adjoining rooms in Lippitt Hall and numbers over seventeen thousand volumes. The books are arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a card catalog gives

author, title, and subject entries. As the library has been from the first intended for reference work, the various departments of instruction have made their selections with the greatest care. In the reading-room, one hundred and twenty of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

Since the library has been a government depository twenty-five hundred books and pamphlets have been received, which are of value in scientific investigation and research.

The library is open every week day from 8:00 A. M. to 6:00 P. M., with the exception of an hour at noon. The librarian or her representative is in constant attendance, to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the State are at liberty to use the library.

Location

The college campus is one and one-half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. The ride from Providence is about forty to forty-five minutes in length. From New York the time is some four hours.

Telephone Calls

The college office cannot undertake to call students to the telephone. Messages will be taken to be delivered to students as soon as practicable. Men students boarding at the college may be reached over the pay-station telephone at East Hall, Narragansett Pier 20259-J at 7:00 to 7:30 A. M., 12:00 to 12:30 P. M., and 6:00 to 6:30 P. M. Women students may be reached over the pay-station telephone at Davis Hall 20259-W, at 7:30-8:00 A. M., 12:30-1:00 P. M., and 6:30-7:30 P. M.

STUDENT ORGANIZATIONS

Agricultural Club

GEORGE S. R. MOORHOUSE.....	President
FRANK R. WITHAM.....	Vice-President
WILLIAM H. BROWN.....	Treasurer
GEORGE L. PARKER.....	Secretary

The Beacon

IRVING LESTER CHURCHILL.....	Editor-in-Chief
FRANK RAYMOND WITHAM.....	Managing Editor
WADE ALLEN MOREHOUSE.....	Business Manager

Chemical Society

HAROLD C. BLOXHAM.....	President
ALVAN J. ALLEN.....	Secretary
FRANK H. TOTMAN.....	Treasurer
JAMES R. HANLEY.....	Librarian

Debating Society

TIMOTHY E. GEARY.....	President
E. J. ERNST.....	Secretary-Treasurer

Phi Delta Dramatic Society

ARVID S. ANDERSON.....	President
GRACE L. ADAMS.....	Secretary
FRED N. CLARKE.....	Treasurer

Engineering Society

JOSEPH B. BYRNES.....	President
MILTON G. GODSCHALL.....	Secretary-Treasurer

Glee Club

DR. JULES JORDAN.....	Director
JOHN FREMONT NYE.....	Manager
VINCENT J. RODDY.....	Leader

The Grist

VINAL N. HASTINGS.....	Editor-in-Chief
RAYMOND E. SIEGEL.....	Business Manager

Student Council

EDWIN HAROLD COKER.....	President
MARTHA SMITH	Secretary

Tau Kappa Alpha

GEORGE A. CHANDLER.....	President
ARTHUR C. SPRAGUE.....	Secretary-Treasurer

Young Men's Christian Association

JAMES HAMER HOLDEN.....	President
IRVING LESTER CHURCHILL.....	Secretary
WALTON BUTTERWORTH	Treasurer

Young Women's Christian Union

EMILY MARTIN	President
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Men's Athletic Association

GEORGE A. CHANDLER.....	President
RICHARD G. CASEY.....	Vice-President
RAYMOND A. HUDSON.....	Secretary

Women's Athletic Association

RUTH SMITH.....	President
HELEN FESSENDEN	Secretary

Battalion Organization, 1921-1922

The Rhode Island State College Infantry R. O. T. C. Unit has been organized into a provisional battalion consisting of a Headquarters Detachment and three provisional companies, "A", "B", and "C".

The battalion is commanded by a Major.

The Headquarters Detachment is commanded by a Second Lieutenant, who is also Band Leader. The Headquarters Detachment consists of one First Sergeant (Drum Major) and a Band Section.

Company A is composed of the Sophomores enrolled in the Military Department. It is commanded by a Captain, who is assisted by a First Sergeant, and is divided into two platoons. Each platoon is commanded by a Second Lieutenant, who is assisted by a Platoon Sergeant. Each platoon has two Sergeants, who act as right and left guides. Each platoon is divided into three squads led by Corporals.

Companies B and C are composed of the Freshmen enrolled in the Military Department. The organization of these companies is the same as that of Company A.

The above organization is based upon the present-day organization of a Regular Army infantry company. By combining the two platoons of each company, we form one war strength platoon of same, and the three war strength platoons form one war strength infantry company.

The three squad platoons of each of our companies correspond to a war strength section. They are suitable subdivisions for drill and may be easily combined for platoon and company terrain exercises and demonstrations.

Men are divided according to their training so that the development of none is hindered by drill with men less advanced. The men graduate naturally from the Freshman companies to the Sophomore company, to a non-commissioned officer grade in their Junior year and a higher non-commissioned officer grade or a commissioned officer grade in their Senior year.

The company officers and non-commissioned officers are chosen by competition from the Seniors and Juniors who are taking the Advanced Course, R. O. T. C. The students appointed receive the commissions and warrants of their rank in the Rhode Island State College R. O. T. C. Unit.

The work to be covered at drill is announced about a week in advance, and all men are given an opportunity to demonstrate their ability in drill and command.

Roster of Officers and Non-Commissioned Officers

CAPTAIN A. S. KNIGHT, Infantry, U. S. A.
Professor of Military Science and Tactics

CAPTAIN JOSEPH CHURCH, Infantry, U. S. A.
Assistant Professor of Military Science and Tactics

ASSISTANT INSTRUCTORS

Master Sergeant.....ORVILLE D. GROESBECK, D. E. M. L., U. S. A.
Sergeant.....JOHN J. FARRELL, D. E. M. L., U. S. A.

CADET OFFICERS AND NON-COMMISSIONED OFFICERS

Headquarters Detachment

Major.....FRANK H. TOTMAN
Second Lieutenant (Band Leader).....ALFRED C. BARTON, JR.
First Sergeant (Drum Major).....THOMAS W. SMITH
Sergeant.....ELVIN J. ANDREWS

Company A

Captain.....JOSEPH B. BYRNES
1st Sergeant.....HAROLD E. WHITAKER

First Platoon

JOHN H. REED.....2nd Lt. (Plat. Comdr.).....
LYNDON R. RHODES.....Platoon Sergeant.....
RAYMOND A. HUDSON.....Sgt., R.G., Ldr. 1st Sec.....
F. RAYMOND WITHAM.....Sgt., L.G., Ldr. 2nd Sec.....

Second Platoon

HAROLD E. MARTIN

JOHN C. HOWLAND

HAROLD E. ADAMS

JAMES R. HANLEY

No regular corporals in this company. One man from each squad in company selected to act as corporal each week.

Company B

Captain.....JAMES H. HOLDEN
 1st Sergeant.....GEORGE S. MOORHOUSE

*First Platoon**Second Platoon*

FREDERICK H. TITCHENER....2nd Lt. (Plat. Comdr.)...ARTHUR N. HAMMARLUND
 IRVING L. CHURCHILL.....Platoon Sergeant.....ALVAN J. ALLEN
 HAROLD F. GEE.....Sgt., R.G., Ldr. 1st Sec.....JAMES G. SHAW
 WILLIAM S. FORT.....Sgt., L.G., Ldr. 2nd Sec.....TIMOTHY E. GEARY
 WILLIAM J. CONNORCorporal, 1st Squad.....JAMES C. TWEEDELL
 RALPH S. SHAW.....Corporal, 2nd Squad.....VINCENT J. RODDY
 WILLIAM H. BROWN.....Corporal, 3rd Squad.....AARON NORMAN

Company C

Captain.....HAROLD F. KERN
 1st Sergeant.....WATSON C. GILLIS

*First Platoon**Second Platoon*

ALBERT E. HOLBURN.....2nd Lt. (Plat. Comdr.)...FREDERICK C. REYNOLDS
 GORDON L. HARRINGTON.....Platoon Sergeant.....HOWARD A. HOBBS
 FREDERICK A. TURNER.....Sgt., R.G., Ldr. 1st Sec.....JOHN E. WOOLLEY
 ARTHUR E. SWANSON.....Sgt., L.G., Ldr. 2nd Sec.....HAROLD C. WARDEN
 GEORGE S. HASLAM.....Corporal, 1st Squad.....JOSEPH I. KENNEY
 JOHN A. SWAHN.....Corporal, 2nd Squad.....GEORGE H. CRESSY
 HARRY C. CHANDLER.....Corporal, 3rd Squad.....JOHN SALZILLO

PRIZES AND HONORS

Scholarship Honors

PHI KAPPA PHI

In the spring of 1913 was organized at Rhode Island State College a chapter of *Phi Kappa Phi*, a national scholarship society, whose purpose, as stated in the preamble of the constitution, is "to provide a Fraternity, dedicated to the Unity and Democracy of Education, and open to honor graduates of all departments of American Universities and Colleges."

The national society was founded at the University of Maine, in 1897. Since then, the number of chapters has increased to twenty-two, with a total membership of more than 4,000. The total membership of the local chapter to date is 81. The number of active members of the chapter at present is 15.

Undergraduates recently elected to membership are:

CLASS OF 1921

Harold James Hall Baker	Joseph Edward O'Neil
Samuel Allen McKee	Joseph Wallace Peckham
Charles Howard Wales	

CLASS OF 1922

Irving Lester Churchill	Edwin Harold Coker	He'len S. Fessenden
Harold E. Martin	Helen Louise Tabor	

The officers of the society are:

PROFESSOR ROYAL L. WALES.....	President
DR. HAROLD W. BROWNING.....	Secretary
MR. PHILIP H. WESSELS.....	Treasurer

THE BURCHARD CUP

In 1912 the Honorable Roswell B. Burchard presented to the college a handsome silver cup to be used as a fraternity scholarship trophy. Each year the fraternity or other organized group of students whose average scholarship grade stands highest, wins the honor of having its name inscribed on the cup. When any fraternity has achieved this distinction for three consecutive years, it thereby secures permanent ownership of the cup. The cup is now in the possession of *Lambda Chi Alpha*.

Debate Honors

TAU KAPPA ALPHA

A debating society was organized at Rhode Island State College in 1913 for the purpose of arousing, among the students, interest in intercollegiate debating. During the period from 1911 to 1915, inclusive, an annual debate was held with Massachusetts Agricultural College. In 1916 Rhode Island debated with New Hampshire State College at Kingston. During the period from 1916 to 1919, inclusive, intercollegiate debate activities were omitted on account of the World War.

In the spring of 1916, however, steps were taken to secure a chapter of *Tau Kappa Alpha*. Because of enlistment or graduation of those interested, and because of general inactivity in intercollegiate debate thruout the country, matters were delayed so that the local chapter

did not become fully organized until the spring of 1920, following the double debate with Bowdoin College, on May 7.

In 1921 Rhode Island debated with Connecticut Agricultural College at Storrs. In the winter of 1921-2 the Southern New England State College Triangular Debate League was organized, composed of Massachusetts Agricultural College, Connecticut Agricultural College, and Rhode Island State College. The intercollegiate contests of the League were held on March 16, 1922, Rhode Island's affirmative team going to Amherst, and her negative team debating Connecticut at Kingston. By reason of participating in these debates, the following are now eligible to membership in *Tau Kappa Alpha*:

Irving L. Churchill
Walter B. Davis
Timothy E. Geary

James R. Hanley
Francis R. Smith
Arthur C. Sprague

The following were elected to membership in *Tau Kappa Alpha* in 1921:

Alfred Carr Barton
George Alfred Chandler

Harold Frederick Gee
Everett Bernard McAlevy

The officers of the society are:

EDWIN HAROLD COKER.....	President
ALBERT EDWARD HOLBURN.....	Secretary

ALUMNI DEBATE TROPHY

In 1913 the alumni of the College donated a silver cup to be offered as a trophy for competition between picked teams representing the successive Freshman and Sophomore classes. Since that time the annual Freshman-Sophomore Debate Contest has served a good purpose in bringing out debaters among the underclassmen. In 1922 the contest was won by Messrs. Tower, Ernst, and Tweedell of the Sophomore Class.

BIGELOW DEBATE CUP

In the Fall of 1920 Mr. and Mrs. Carle M. Bigelow manifested their interest in their *Alma Mater* and their appreciation of the value of debate activities by offering a sterling silver cup as an interfraternity debate trophy to be competed for by the fraternities of the College until one of them shall win the contest three years in succession. In the final debate for 1922 the successful contestants were Messrs. Tower, Tweedell and Coker, representing *Lambda Chi Alpha*.

Honors Awarded Commencement Day, June 20, 1921

FINAL HONORS FOR FOUR YEARS

HIGHEST HONORS

Samuel Allen McKee	Charles Howard Wales
Joseph Edward O'Neill	

HIGH HONORS

Harold James Hall Baker	Joseph Wallace Peckham
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HONORS

Francis Pierce Brightman	Rocco Pezzullo
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HONORS FOR THE YEAR

SENIOR

Samuel Allen McKee
 Charles Howard Wales
 Joseph Edward O'Neill
 Waldo Albert Smith
 Harold James Hall Baker
 Joseph Wallace Peckham
 Clarence Edward Nordquist
 Irene May Sheehan

JUNIOR

Helen Louise Tabor
 Edwin Harold Coker
 Irving Lester Churchill
 Joseph Bernard Byrnes
 Wade Allen Morehouse
 Helen Stewart Fessenden
 Angelo Mario Gencarello

SOPHOMORE

Edward Patrick Dunn
 Miriam Ayer Cargill
 Timothy Edward Geary
 Joseph Francis McCauley
 Raymond Maxwell Peckham
 Caroline Frances Tabor
 George Lee Parker
 Emily Madeline Martin

FRESHMAN

Joseph Clifton Ricketts
 James Collier Tweedell
 William Horace Brown
 George Stevenson Haslam
 Warren Beebe Fish
 Oliver Jackson Worthington
 Flossie Eliza Buxton
 Alice Teele Sisson
 John Vogler Tower
 Edward Starkweather Beebe
 Fred Norcross Clarke
 Dorothy Clarke Knowles

Degrees Conferred in 1921**Bachelor of Science**

Flora McPherson Anderson
 Henry Frederick Baacke
 Harold James Hall Baker
 Harry Der Bogosian
 Francis Pierce Brightman

Walter Webster Moore
 Clarence Edward Nordquist
 James O'Brien
 Howard Joseph O'Connell
 Joseph Edward O'Neill

Mary Catherine Campbell
 Elizabeth Edith Davis
 Edwin Marshall Deery
 Edmund Cecil Eastwood
 Gladys Darling Gerstle
 Russell Cheney Hawes
 Albert Henry Holley
 Esther Lucile Kohlberg
 Samuel Joseph Levy
 John Joseph Maloney
 Pasquale Martelli
 Samuel Allen McKee
 Leon John Messerlian

Earl Geer Palmer
 Joseph Wallace Peckham
 Rocco Pezzullo
 Lawrence Austin Records
 Irene May Sheehan
 Isaac Thornton Sherman
 Waldo Albert Smith
 Louis Stillman
 Nathan Torgen
 Arthur Joseph Tuzio
 Charles Howard Wales
 Frederick Earle Walker
 Angelo Joseph Zerbarini

Bachelor of Education

Rose Alicia Butler.

Master of Science

William Mather

Helena A. M. Tibbetts

Mechanical Engineer

Carle Muzzy Bigelow

Honorary Degrees

Doctor of Laws.

Kenyon Leech Butterfield

William H. Sweetland

Doctor of Education.

John Lincoln Alger

Master of Education.

Clara Elizabeth Craig

STUDENTS

Graduates.

Holmes, Myron Gerrish (New Hampshire State, B. S., 1921), Appl. Sci.	Kingston
Jones, Robert Lambert, (Mass. A. C., B. S., 1921), Appl. Sci.	Kingston
Pezzullo, Rocco (R. I. S. C., B. S., 1921), Appl. Sci.	Kingston
Williams, Mary Emma (Simmons, B. S., 1921), Appl. Sci.	Kingston

Seniors

Adams, Grace Louise, Appl. Sci.	East Providence
Backlin, Elof Gunner, Mech. Eng.	Orange, Mass.
Barton, Alfred Carr, Jr., Chem. Eng.	Warren
Benjamin, Alfred Gould, Elec. Eng.	East Greenwich
Bloxham, Harold Carlton, Chem. Eng.	Pawtucket
Byrnes, Joseph Bernard, Civil Eng.	Providence
Churchill, Irving Lester, Appl. Sci.	Kingston
Coker, Edwin Harold, Mech. Eng.	Providence
Connolly, Bernard Ambrose, Elec. Eng.	Brockton, Mass.
Corr, Elizabeth Eloise, Home Econ.	East Greenwich
Fessenden, Helen Stewart, Home Econ.	Phenix
Fisher, Lloyd Herbert, Elec. Eng.	Providence
Ford, Willard Harding, Civil Eng.	Avon, Mass.
Gardner, Charles Sydney, Elec. Eng.	Brockton, Mass.
Gencarello, Angelo Mario, Mech. Eng.	Westerly
Greene, James Francis, Elec. Eng.	Woonsocket
Hammarlund, Arthur Norman, Appl. Sci.	East Providence
Hammett, Betty Westall, Home Econ.	Newport
Harrington, Gordon Leslie, Mech. Eng.	Woodville
Harrington, Helen Priscilla, Home Econ.	Greene
Hastings, Vinal Norberg, Chem. Eng.	Dorchester
Haupt, Charlotte May, Home Econ.	Providence
Hewitt, Etta Grace, Educ.	Providence
Hobbs, Howard Alfred, Appl. Sci.	East Providence
Holburn, Albert Edward, Appl. Sci.	Pawtucket
Holden, James Hamer, Appl. Sci.	Hartford, Conn.
Howland, John Calder, Chem. Eng.	Warren
Hoxsie, Ruby Arden, Home Econ.	Canonchet
Hughes, Bertha Isabella, Home Econ.	Providence
Ingraham, George Ellery, Jr., Chem. Eng.	Bristol

Kinder, Joseph Church, Elec. Eng.....	Bristol
Kinne, Norma Doris, Home Econ.....	East Greenwich
LaPerche, Raymond Charles, Appl. Sci.....	Providence
Levine, Sidney Joseph, Appl. Sci.....	Providence
Lowry, Moses Christy, Appl. Sci.....	Westerly
Lucey, Richard Alphonsus, Elec. Eng.....	Brockton, Mass.
Martin, Harold Edward, Mech. Eng.....	Providence
Moorhouse, George Sidney Redvers, Agr.....	Westerly
Morehouse, Wade Allen, Mech. Eng.....	Providence
Nye, John Fremont, Elec. Eng.....	Westerly
Pastorini, Louis Eugene, Civil Eng.....	Brockton, Mass.
Pope, Wallace, Irving, Agr.....	Providence
Potter, Grant Hamblett, Civil Eng.....	Providence
Reed, John Hamilton, Agr.....	Providence
Regester, Isabel Allen, Home Econ.....	Providence
Rhodes, Lyndon Russell, Agr.....	Edgewood
Scorpio, Angelo, Appl. Sci.....	Providence
Simas, William Harvey, Appl. Sci.....	East Providence
Smith, Lillian Gladys, Home Econ.....	Providence
Smith, Martha Stedman, Home Econ.....	Newport
Tabor, Helen Louise, Home Econ.....	Jamestown
Tew, Mary Gladys, Home Econ.....	Phenix
Titchener, Frederick Herman, Agr.....	Providence
Totman, Frank Howard, Appl. Sci.....	Providence
Wade, Senior, Agr.....	Woonsocket
Watson, Alma Linwood Barlow, Home Econ.....	Providence
Whitaker, Harold Earl, Agr.....	East Providence
Wood, George William, Civil Eng.....	Providence
Yarvots, Evart, Elec. Eng.....	New London

Juniors

Abbott, Ruth Madeline, Home Econ.....	Providence
Adams, Harold Earl, Mech. Eng.....	Providence
Allen, Alvan Jason, Appl. Sci.....	Providence
Anderson, Arvid Simmons, Mech. Eng.....	Swampscott, Mass.
Anderson, Elmer Webster Nathanael, Elec. Eng.....	Pontiac
Andrews, Elvin Joseph, Civil Eng.....	Newport
Bailey, Abner Harris, Appl. Sci.....	Bristol
Bowe, Ella Amanda Louise, Home Econ.....	Providence
Butterworth, Walton Booth, Appl. Sci.....	Arkwright
Cargill, Miriam Ayer, Appl. Sci.....	Valley Falls
Casey, Richard Grant, Elec. Eng.....	Bridgewater, Mass.
Chandler, George Alfred, Chem. Eng.....	Providence
Coleman, Harry Vincent, Appl. Sci.....	Pawtucket
Conefrey, Joseph Barlow, Elec. Eng.....	Brockton, Mass.
Conefrey, Walter Thomas, Elec. Eng.....	Brockton, Mass.

Cook, Marion Louise, Home Econ.....	Glendale
Datson, Doris Beatrice, Home Econ.....	Westerly
Davis, Walter Brighton, Chem. Eng.....	Middletown, Conn.
Dickinson, George, Jr., Elec. Eng.....	Providence
Dougherty, Francis Edward, Elec. Eng.....	Providence
Edwards, Earl Sylvester, Chem. Eng.....	Providence
Eldredge, Raymond Atwood, Agr.....	Chatham, Mass.
Ellis, Lester Joseph, Civil Eng.....	Brockton, Mass.
Farnham, Raymond Ellsworth, Mech. Eng.....	Providence
Flynn, Frederick John, Civil Eng.....	Woonsocket
Fort, William Sutherland, Mech. Eng.....	Woonsocket
Ganz, Arthur William, Elec. Eng.....	Providence
Gates, Henry Stillman, Elec. Eng.....	Narragansett Pier
Geary, Timothy Edward, Elec. Eng.....	Westerly
Gee, Harold Frederic, Elec. Eng.....	Ashton
Gillis, Watson Clarence, Mech. Eng.....	Providence
Godschall, Milton Griffith, Mech. Eng.....	Woonsocket
Hanley, James Richard, Appl. Sci.....	Providence
Howe, Vaslet Little, Mech. Eng.....	Providence
Hudson, Raymond Arthur, Chem. Eng.....	Woonsocket
Johnson, Eskil Conrad, Civil Eng.....	Crompton
Kimball, George Pryce, Appl. Sci.....	Providence
Kinsey, Kenneth Lee, Elec. Eng.....	Providence
Kulasewski, Bolus Alexander, Civil Eng.....	Crompton
LaBree, Lawrence Winthrop, Elec. Eng.....	Providence
Leighton, Mary Belding, Home Econ.....	Kingston
Lewis, Helen Frances, Home Econ.....	Pawtucket
McCaughey, Everett Vincent, Agr.....	Lonsdale
McCauley, Joseph Francis, Elec. Eng.....	Providence
McKenzie, Frances Henrietta, Home Econ.....	Providence
McLaughlin, Joseph Dominick, Mech. Eng.....	Providence
Martin, Emily Madeline, Home Econ.....	Newport
Monsen, Alice Helene, Home Econ.....	Newport
Mowry, Churchill Herbert, Elec. Eng.....	Providence
Neill, Everett Cunningham, Mech. Eng.....	Rumford
Parker, George Lee, Agr.....	Oakland
Peckham, Raymond Maxwell, Agr.....	Little Compton
Perry, Roy, Elec. Eng.....	North Att'boro, Mass.
Piacitelli, Joseph Albert, Mech. Eng.....	Providence
Pike, Charles Amos, Elec. Eng.....	Providence
Reynolds, Frederick Conrad, Elec. Eng.....	Providence
Ritzau, Walter John, Agr.....	Providence
Salisbury, Richard Norman, Mech. Eng.....	Providence
Salzil'o, John, Mech. Eng.....	Providence
Shaw, James Gammon, Agr.....	East Providence
Shedd, Elizabeth Edson, Home Econ.....	East Providence
Siegel, Raymond Earl, Agr.....	Arlington
Smith, Francis Rowland Farr, Elec. Eng.....	Providence

Smith, Ruth Hoffman, Home Econ.....	Elmwood
Staf, Ella Hulda, Home Econ.....	Providence
Swahn, John Axel, Appl. Sci.....	Woonsocket
Tabor, Caroline Frances, Home Econ.....	Jamestown
Turner, Frederick Allen, Mech. Eng.....	Riverside
Vient, Louis Francois, Elec. Eng.....	Providence
Walsh, Philip Leo, Mech. Eng.....	Fall River, Mass.
Witham, Frank Raymond, Agr.....	Riverside
Wood, Robert Palmer, Appl. Sci.....	Riverpoint
Wood, William Havens, Agr.....	Slocums
Woodhouse, Edwin Clarence, Chem. Eng.....	Providence
Woolley, John Edward, Elec. Eng.....	Woonsocket

Sophomores

Allen, Eleanor Austin, Home Econ.....	Edgewood
Barber, Hiram William, Jr., Mech. Eng.....	Westerly
Bateman, Carl, Elec. Eng.....	Manville
Beck, William Mitchell Hawkins, Jr., Agr.....	Everett, Mass.
Bemis, Harlan George, Chem. Eng.....	Riverside
Bennett, William Leonard Harrison, Appl. Sci.....	Providence
Bergstrom, Norman Alfred, Elec. Eng.....	East Greenwich
Birkedal, Raymond Norman, Appl. Sci.....	Pawtucket
Brady, Charles, Agr.....	Auburn
Briggs, Frederick Alvin, Agr.....	East Greenwich
Brown, William Horace, Agr.....	Newport
Buxton, Flossie Eliza, Home Econ.....	Pascoag
Chandler, Harry Clayton, Appl. Sci.....	Providence
Chappell, Matthew, Elec. Eng.....	Westerly
Child, Everett Spencer, Elec. Eng.....	Barrington
Christenson, Andrew Thomas Joseph, Mech. Eng.....	Newport
Clarke, Fred Norcross, Jr., Agr.....	Edgewood
Clarke, Luke, Elec. Eng.....	Arctic
Connor, William Joseph, Agr.....	Providence
Cressy, George Henry, Chem. Eng.....	Providence
Crimmins, John Edward, Jr., Elec. Eng.....	Brockton, Mass.
Cummings, Dorothy, Home Econ.....	Providence
Dowling, Anna Clare, Home Econ.....	Providence
Dowling, Howard Martin, Civil Eng.....	Providence
Drew, Helen Charlotte, Appl. Sci.....	Phenix
Ellsworth, Leonard Knight, Civil Eng.....	Edgewood
Ernst, Ehler John, Jr., Appl. Sci.....	Providence
Fort, Esther Evelyn, Appl. Sci.....	Woonsocket
Gallup, Benjamin Tyler, Civil Eng.....	Centerville
Gledhill, Charles Leonard, Elec. Eng.....	Conimicut
Greene, Walter Copping, Jr., Mech. Eng.....	Providence
Harribine, Grace Elizabeth, Home Econ.....	Providence

Hartwell, Margaret Arleen, Home Econ.....	Littleton, Mass.
Haslam, George Stevenson, Chem. Eng.....	Palmerton, Pa.
Hathaway, Leonard Briggs, Elec. Eng.....	Woonsocket
Hill, Alfred Milton, Elec. Eng.....	Bristol
Hill, Ralph Pringle, Mech. Eng.....	Newport
Horton, Clarence Ambrose, Civil Eng.....	Providence
Howard, Roy William, Elec. Eng.....	Providence
Hudson, Raymond Arthur, Chem. Eng.....	Woonsocket
Johnson, Clarence Edward, Elec. Eng.....	East Greenwich
Kenny, Joseph Ignatius, Elec. Eng.....	Providence
Kern, Harold Ferdinand, Chem. Eng.....	Providence
Kirby, Thomas Joseph, Agr.....	Pascoag
Knott, Howard Evans, Elec. Eng.....	Providence
Knowles, Dorothy Clarke, Home Econ.....	West Kingston
Kresge, Wharton Webster, Mech. Eng.....	Palmerton, Pa.
Lamprey, Farrar Loomis, Mech. Eng.....	Eden Park
Laycock, Thomas Alfred, Elec. Eng.....	Edgewood
Leathers, Ruth Althea, Home Econ.....	Oaklawn
Ledwidge, Augustine Thomas, Jr., Chem. Eng.....	Westerly
Little, Henry Raymond, Elec. Eng.....	Providence
Little, Walter Bradford, Mech. Eng.....	Providence
McGill, Thomas Francis, Jr., Civil Eng.....	Woonsocket
McGrath, Lelia Elizabeth, Home Econ.....	Valley Falls
Maliff, Thomas, Agr.....	North Easton, Mass.
Martin, Francis Raymond, Appl. Sci.....	Brockton, Mass.
Matheson, George Alexander, Elec. Eng.....	Bristol
Matteson, Ray Carroll, Appl. Sci.....	Anthony
Michie, Harry Richard, Appl. Sci.....	Providence
Nordquist, Carl Arthur, Civil Eng.....	Providence
Norman, Aaron, Elec. Eng.....	Providence
Norman, Morris, Elec. Eng.....	Woonsocket
North, Charles Stewart, Elec. Eng.....	Newport
Peckham, Ella Leona Remembrance, Home Econ.....	Newport
Peckham, Gladys Jasmine Louise, Home Econ.....	Newport
Perry, Pauline Frances, Home Econ.....	Providence
Post, Ernest Franklin, Mech. Eng.....	Mystic, Conn.
Rabnowitz, Benjamin, Mech. Eng.....	Brockton, Mass.
Reid, William Mitchell, Mech. Eng.....	Mapleville
Ricketts, Joseph Clifton, Chem. Eng.....	Lakewood
Rocheleau, Homer Roland, Mech. Eng.....	Woonsocket
Roddy, Vincent James, Mech. Eng.....	Providence
Romer, Irving Carl, Mech. Eng.....	Providence
Rowell, Amos Farnsworth, Appl. Sci.....	Groveland, Mass.
Schaller, Arthur Joseph, Elec. Eng.....	Providence
Schattle, William Osborne, Mech. Eng.....	Providence
Shea, William Riley, Civil Eng.....	North Attleboro, Mass.
Simmons, Maitland Pierce, Agr.....	Edgewood

Sisson, Alice Teele, Home Econ.....	Little Compton
Smith, Thomas William, Civil Eng.....	Three Rivers, Mass.
Smith, William Frank, Appl. Sci.....	Cranston
Spooner, John Horswell, Jr., Appl. Sci.....	Newport
Sprague, Arthur Crawford, Civil Eng.....	Block Island
Steere, Milton Phillips, Agr.....	Chepachet
Tower, John Vogler, Elec. Eng.....	Meshanticut
Turner, Wendell Roscoe, Appl. Sci.....	Riverside
Tweedell, James Collier, Mech. Eng.....	Providence
Warden, Harold Colville, Mech. Eng.....	Adamsville
Whaley, Katie Bowen, Home Econ.....	Wakefield
Wheeler, Stephen Duncan, Agr.....	Pawtuxet
White, Nelson Church, Chem. Eng.....	Cranston
Worthington, Oliver Jackson, Agr.....	Providence

Freshmen

Abramson, Harry Birger, Appl. Sci.....	Auburn
Allen, Hugh, Agr.....	Edgewood
Arnold, Evariste Albert, Eng.....	Pawtucket
Arnold, Everett Perry, Eng.....	Wakefield
Atkinson, Walter Condliff, Eng.....	Providence
Austin, Rupert Harrison, Eng.....	Westerly
Barasch, Morris, Eng.....	Providence
Barnes, Frank Ariel, Agr.....	Woonsocket
Berry, Leila Rhena, Home Econ.....	Providence
Bidwell, Milton, Harris, Eng.....	Providence
Bowden, Ronald Allan, Eng.....	Providence
Bowmar, Louis Hill, Appl. Sci.....	Needham, Mass.
Briggs, James Henry, Jr., Appl. Sci.....	Wakefield
Brown, Donald Burch, Eng.....	Pawtucket
Buckley, William LeRoy, Eng.....	Providence
Burdick, Evelyn Augusta, Home Econ.....	Kingston
Burdick, Helen Shaw, Home Econ.....	Kingston
Burlingame, Leslie Grant, Eng.....	Woonsocket
Cavanaugh, Richard William, Eng.....	Pawtucket
Chase, Nathan Harwood, Appl. Sci.....	Dorchester, Mass.
Chatterton, Roland Henry, Agr.....	Kingston
Cohen, Stella, Home Econ.....	Providence
Colitz, David Harold, Appl. Sci.....	Providence
Connly, Helen Benedict, Home Econ.....	Pawtucket
Coolidge, John Shaw, Eng.....	Whitman, Mass.
Cooney, Edward Joseph, Appl. Sci.....	Providence
Crankshaw, Marian Matilda, Home Econ.....	Providence
Cruickshank, George, Eng.....	Providence
Cunningham, Francis Graham, Eng.....	Edgewood
Curtis, William Arthur, Eng.....	Natick

Cuthbertson, Doris Bertha, Home Econ.....	Valley Falls
Daley, Francis Clarence, Eng.....	Nasonville
Day, Thomas Harold, Appl. Sci.....	Revere, Mass.
Duggan, Rose Margaret, Home Econ.....	Providence
Durfee, Herbert Nichols, Appl. Sci.....	Cranston
Ferguson, Jesse Howard, Eng.....	Providence
Flaherty, Ambrose Stephen, Eng.....	Valley Falls
Forrow, Oscar Augustus, Eng.....	Centerville
Gaddes, George Thomas, Jr., Eng.....	Pawtucket
Gage, Ruth Erdene, Appl. Sci.....	Edgewood
Gammons, James Edgar, Jr., Eng.....	Edgewood
Gates, Albert Myron, Eng.....	Providence
Gilkey, Warren Belcher, Agr.....	West Somerville, Mass.
Gluckman, Manuel, Eng.....	Providence
Grant, Norman Belcher, Eng.....	Dedham, Mass.
Guillemette, Delphis Victor, Eng.....	Pawtucket
Hall, Emery Howard, Eng.....	Pawtucket
Halloran, Frances Mary, Home Econ.....	Fall River, Mass.
Hanson, Mary Hoxie, Home Econ.....	Peace Dale
Hardy, James Hazen, Jr., Appl. Sci.....	New York, N. Y.
Heath, Harold Carlos, Eng.....	Woonsocket
Henius, Ruel David, Appl. Sci.....	Providence
Hogan, Martin Purtill, Jr., Eng.....	Providence
Holmes, Raymond Dennis, Eng.....	Fall River, Mass.
Hopkins, Dorothy, Home Econ.....	Chepachet
Howard, Clyde Spencer, Eng.....	Saylesville
Howarth, Albert Alexander, Appl. Sci.....	Providence
Howarth, William, Eng.....	Providence
Johnson, Earle Kramer, Appl. Sci.....	Cranston
Joyce, Milton Goff, Agr.....	Rumford
Kachidoorian, Carnig Peter, Eng.....	Haverhill, Mass.
Kaufman, Jacob Isaac, Eng.....	Pawtucket
Keegan, Gordon Webster, App ^l . Sci.....	Kingston
Kennedy, William, Eng.....	Everett, Mass.
Kinney, Galen Robinson, Appl. Sci.....	Kingston
Kirby, Marion Laura, Home Econ.....	Providence
Lamb, Joseph Mark, Eng.....	Revere, Mass.
Latham, Louisa Briggs, Home Econ.....	Centerdale
Lawrence, Leonard Dana, Eng.....	East Greenwich
Leslie, William Henry, Jr., Appl. Sci.....	Wakefield
Levinson, Henry Carl, Appl. Sci.....	Pontiac
Lucker, William Frederic, Eng.....	Stonington, Conn.
McCarthy, Helen Josephine, Home Econ.....	Brockton, Mass.
McKechnie, William Victor, Eng.....	Pawtucket
McKenna, Evelyn Celine, Appl. Sci.....	East Providence
Macintosh, Henry Havelock, Appl. Sci.....	Providence
Makin, Albert Edward, Eng.....	Providence

Markham, Dorothy Mildred, Home Econ.....	Providence
Marks, Morris, Eng.....	Warren
Maynard, Omer Anthony, Eng.....	Providence
Miller, Arthur Baxter, Eng.....	Woonsocket
Mooney, Florence Ada, Home Econ.....	Providence
Moskovich, Edith, Home Econ.....	Newport
Mycock, Alfred Gilbert, Eng.....	Fall River, Mass.
Nichols, Stacy Waterman, Eng.....	Cranston
Nichols, Warren Dawley, Agr.....	Slocums
Northup, Raymond Capwell, Agr.....	Anthony
Nye, Marshall Hudson, Appl. Sci.....	Providence
Paine, George Arthur, Appl. Sci.....	Providence
Palmer, Frederick Nelson, Appl. Sci.....	Bristol
Paquin, Eric Maynard Eng.....	Riverside
Pearson, Walter Franklin, Eng.....	Lynnfield Center, Mass.
Peck, Mason Johnnot, Eng.....	Providence
Pickles, Frank Howarth, Eng.....	Ashton
Pilkington, Hartwell Gordon, Eng.....	Providence
Pinto, Joseph William, Jr., Appl. Sci.....	Newport
Raybold, Arthur William, Eng.....	Providence
Reilly, Edward Joseph, Eng.....	Woonsocket
Reitman, Benjamin, Eng.....	Providence
Robinson, Samuel Rodman, Jr., Eng.....	Wakefield
Rollinson, John, Eng.....	Wakefield
Rubin, Arthur Zelig, Appl. Sci.....	Revere, Mass.
Sandberg, Erland Lambert, Eng.....	Seekonk, Mass.
Schoeller, Theobald Harmann, Eng.....	Woonsocket
Seaman, Harry Raymond, Eng.....	Brockton, Mass.
Shaw, Ralph Sprague, Agr.....	Lonsdale
Shea, Walter Joseph, Eng.....	Olneyville
Shields, Frank James, Eng.....	Pascoag
Simpson, Reginald Hoit, Agr.....	Belmont, Mass.
Sisson, Rollo Hale, Eng.....	East Providence
Siswick, Earl Sidney, Eng.....	Hope Valley
Smith, Edward Albert, Appl. Sci.....	Nayatt
Smith, Leslie Thomas, Agr.....	Whitman, Mass.
Smith, Norman Wade, Agr.....	Providence
Snow, Willis James, Appl. Sci.....	New London, Conn.
Spargo, George Edward, Eng.....	Westerly
Stevens, Frederic Davis, Eng.....	Cranston
Strauss, Abraham Joseph, Eng.....	Providence
Sutcliffe, Raymond Sampson, Eng.....	Little Compton
Swan, Vera Isabel, Home Econ.....	Providence
Taylor, William Edwin, Appl. Sci.....	Providence
Thatcher, John Gardner, Agr.....	Brookline, Mass.
Tilley, Louis Edward, Eng.....	Newport
Tobey, Virgil Wentworth, Agr.....	Everett, Mass.

Tower, Emerson, Appl. Sci.....	Meshanticut
Trammell, Frank Milton, Eng.....	Providence
Tribolet, Theodore Ralph, Appl. Sci.....	Kingston
Turner, Raymond Woodruff, Eng.....	Brockton, Mass.
Turner, Ruth Buffington, Home Econ.....	Providence
Vaughn, Mercy Louise, Home Econ.....	Providence
Walling, Irvin Eldin, Agr.....	Providence
Watson, Arthur Merrell, Eng.....	Newport
Westin, Lawrence Russell, Eng.....	Providence
Whipple, Kenneth Young, Appl. Sci.....	Auburn
Williams, Doris Ethel, Home Econ.....	Edgewood
Woodward, Burton Staples, Eng.....	Woonsocket
Wright, James Attmore, Jr., Appl. Sci.....	Wakefield
Zawatsky, William, Eng.....	Providence

Irregulars

Berkander, Edna Antoinette, Appl. Sci.....	Providence
Beylerian, Leon, Chem. Eng.....	Pawtucket
Birch, Ethel Gardiner, Home Econ.....	Kingston
Brown, Pierce Benjamin, Appl. Sci.....	Pawtucket
Butler, Sarah Louise, Home Econ.....	Kingston
Callanan, John Joseph, Agr.....	Kingston
Dunleavy, Henry Jay, Agr.....	Boston, Mass.
Espie, Stephen Clark, Agr.....	Kingston
Fletcher, William Ingersoll, Agr.....	Lakewood
Lafleur, Leo Henry, Agr.....	Warren
Littlefield, Richard Webster, Appl. Sci.....	Natick
Murray, Gertrude Frances, Educ.....	Providence
O'Rourke, James Francis, Appl. Sci.....	Providence
Stedman, Helen Adeline, Home Econ.....	Wakefield

Two-Year Agriculture

Alley, Raymond Thayer.....	Providence
Barber, Elmer Devergne.....	Fort Adams
Breingan, Peter.....	Newport
Brown, Waterman Farnum.....	Lonsdale
Doyle, Sidney Isaac.....	Providence
Fearnley, Maurice.....	Kingston
Gibbins, Anthony Joseph.....	Manville
Holmes, Henry.....	West Kingston
Hyland, Edward Francis.....	Providence
Mahoney, John Raymond.....	Providence
Murphy, Jeremiah Arthur.....	Fall River, Mass.
Odette, Eugene.....	Central Falls
O'Neill, Jeremiah Joseph.....	Kingston
Prescott, Reuel Washington.....	Providence
Smith, Ernest Leslie.....	Woonsocket
Wakefield, Fred.....	Olneyville
Yeaw, Harold Wilson.....	North Scituate

Summary

Graduates	4
Seniors	59
Juniors	75
Sophomores	93
Freshmen	138
Irregulars	14
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Total	383
Two-Year	17
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Total	400

Graduates

BACHELOR OF SCIENCE

1894

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ADAMS, GEORGE EDWARD.....Agr. M. Agr. R. I. State College, 1916. Kingston.		Professor of Agronomy and Dean of Agricultural Dept., R. I. S. C.
AMMONDS, GEORGE CLARENCE.....Mech. 54 Eliot St., Boston, Mass.		Railroad Postal Clerk, on N. Y., N. H. & H. R. R.
ARNOLD, CHAPIN TRAFFORT.....Agr. Box 57, Providence.		Electrical Contractor, Office 26 Custom House St., Providence.
BURLINGAME, GEO. WASHINGTON....Agr. R. F. D. No. 2, Box 56, North Scituate		Farmer and Teacher.
CLARK, HELEN MAY (MRS. WM. F. B. LEAVITT), B. L., Smith Col- lege, 1899. Essex Fells, New Jersey.		At home.
KNOWLES, JOHN FRANKLIN.....Mech. Narragansett Pier.		With The Bristow Bros. & Knowles Corporation.
*MADISON, WARREN BROWN.....Agr.		
MATHEWSON, ERNEST HOXSIE.....Mech. Ph. B., Brown University, 1896. Reidsville, North Carolina.		Crop Technologist in Tobacco, U. S. Department of Agricul- ture.
PECKHAM, REUBEN WALLACE.....Agr.		Y. M. C. A. Secretary, 41 Rue de Provence, Paris, France.
RATHBUN, WILLIAM SHERMAN.....Agr. Box 90, R. F. D. No. 2, Holyoke, Mass.		City Editor, Holyoke Evening Telegram.
RODMAN, GEORGE ALBERT.....Mech. New Haven, Conn.		General Supervisor, Bridges and Buildings, Union Station, N. Y., N. H. & H. R. R. Co.
SARGENT, CHARLES LAWRENCE.....Agr. Ph. D., University of Pennsylvania, 1900. 54 Shepard Ave., Newark, N. J.		Technical Director, Murphy Var- nish Co.
SLOCUM, SAMUEL WATSON.....Agr. 60 Summer St., Westerly.		Instructor in Woodwork, West- erly Industrial School.
SPEARS, JOHN BARDEN.....Agr. Foster Centre.		Rural Letter Carrier.

It is earnestly desired that graduates inform the college office of any permanent change of address.

*Deceased.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SWEET, STEPHEN ADELBERT..... Slocum.	Agr.	Farmer.
TUCKER, GEORGE MASON..... Ph. D. Göttingen, 1899. Rosslyn, Va.	Agr.	Farmer.
WILBER, ROBERT ARTHUR..... East Greenwich.	Mech.	Carriage-maker and blacksmith.

1895

*ALBRO, LESTER FRANKLIN.....	Agr.	
BURDICK, HOWLAND..... Kingston.	Agr.	Assistant Professor of Dairying, R. I. S. C.
CLARKE, CHARLES SHERMAN..... 22 Wood St., Bristol.	Mech.	Marine Engineer.
ELDRED, MABEL DEWITT..... Kingston.		Assistant Professor of Art, R. I. S. C.
HAMMOND, JOHN EDWARD..... Jamestown.	Agr.	Farmer.
OATLEY, LINCOLN NATHAN..... Wakefield.	Mech.	Contractor and builder; Coal Dealer.
SCOTT, ARTHUR CURTIS..... Ph. D., Univ. of Wisconsin, 1902. 4114 Cedar Springs Ave., Dallas, Texas.	Mech.	Consulting Engineer, with A. H. Belo & Co., Publishers.
TEFFT, JESSE COTTRELL..... Jamestown.	Mech.	Storekeeper.
WINSOR, BRYON EDGAR..... Coventry.	Mech.	R. F. D., Mail Carrier.

1896

BROWN, MAY (MRS. CHARLES A. WHITE). Narragansett Pier.		At home.
GREENMAN, ADELAIDE MARIA (MRS. R. WALLACE PECKHAM)..... Graduate, School of Expression, 1901. France.		At home.
KENYON, ALBERT LEWIS..... 216 Rochambeau Ave., Providence.	Mech.	Printer, with U. S. Finishing Co.
MOORE, NATHAN LEWIS CASS..... Harrington Park, New Jersey.	Agr.	Fruit-grower.
TABOR, EDGAR FRANCIS..... 39 Everett St., Southbridge, Mass.	Mech.	Salesman, Ford Motor Co.
*WILLIAMS, JAMES EMERSON.....	Agr.	

1897

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS.....Sci. Shannock.		With Underwood Typewriter Co., 74 Franklin St., Boston, Mass.
CASE, HERBERT EDWARDS BROWN..Mech. Ph. B., Brown University, 1900. Graduate, Hartford Theological Seminary, 1904. 14 Beacon St., Boston, Mass.		Asst. Secretary, American Board of Commissioners for Foreign Missions.
GRINNELL, ARCHIE FRANKLIN.....Mech. 104 Potter St., Auburn.		Engineering Draftsman, General Fire Extinguisher Co., Auburn, R. I.
HANSON, GERTRUDE MAIE. (MRS. FREDERICK D. KNAPP).....Sci. Stonington, Conn.		At home.
HOXSIE, BESSIE BAILEY. (MRS. E. F. RUECKERT).....Sci. 98 Melrose St., Providence.		At home.
KENYON, ALBERT PRENTICE.....Mech. 23 Courtland St., Westerly.		Clerk, C. B. Cottrell & Sons Co.
KENYON, CHARLES FRANKLIN.....Mech. Shannock.		Engineer.
LARKIN, JESSIE LOUISE.....Sci. 98 Beach St., Westerly.		At home.
*MARSLAND, LOUIS HERBERT.....Mech.		
TEFFT, ELIZA ALICE.....Sci. East Greenwich.		Teacher.
THOMAS, IRVING.....Mech. Lafayette.		Farmer and Mill Operative.

1898

ARNOLD, SARAH ESTELLE (MRS. R. O. BROOKS).....Sci. 975 East 18th St., Brooklyn, N. Y.		At home.
BARBER, GEORGE WASHINGTON.....Agr. Glendora, Cal.		Rancher.
CARGILL, EDNA MARIA (MRS. LESTER H. BROWN).....Sci. R. F. D. No. 2, Box 96, Valley Falls.		At home.
CASE, JOHN PETER.....Agr. 251 Monadnock Bldg., San Francisco, Cal.		Manager Western Office, Brown Hoisting Machinery Company.
CLARKE, WILLIAM CASE.....Sci. 65 Summer St., Westerly.		General Manager Westerly Elec- tric Light and Power Co.
CONGDON, HENRY AUGUSTUS.....Mech. Kingston.		Farmer.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FLAGG, MARTHA REBECCA..... Abbott Run.	Sci.	At home.
HARLEY, WILLIAM FERGUSON..... 23 Summit Ave., Providence.	Agr.	Buyer, with Callender, McAuslan & Troup Co., Providence.
TURNER, HARRIETTE FLORENCE (MRS. GEO. M. TUCKER)..... Graduate, Drexel Institute, 1900. Maryland.	Sci.	At home.
WILSON, GRACE ELLEN (MRS. W. F. HARLEY)..... 23 Summit Ave., Providence.	Sci.	At home.

1899

BOSWORTH, ALFRED WILLSON..... A. M., Harvard University, 1913. 36 Avalon Road, West Roxbury, Mass.	Sci.	Director of Research for Kellogg Toasted Cornflakes Co.
BROOKS, RALPH ORDWAY..... 975 East 18th St., Brooklyn, N. Y.	Sci.	Consulting Chemist, Bacteriolo- gist, Microscopist, Food-Inspec- tion Expert, 191 Franklin St., New York City.
GEORGE, LILLIAN MABELLE..... A. B., Univ. Illinois, 1904. Graduate, N. Y. State Library School, 1910. 901 Forest St., Bellingham, Mass.	Sci.	Cataloger, State Normal School Library.
HARVEY, MILDRED WAYNE (MRS. WM. H. BLISS)..... 390 Wadsworth Ave., New York City.	Sci.	At home.
KENYON, BLYDON ELLERY..... Dover, New Jersey.	Agr.	Asst. Supt. of Construction, Stone & Webster Eng. Corporation.
KNOWLES, CARROLL..... 77 Chiswick Road, Edgewood.	Mech.	Chief Tool Designer, Brown & Sharpe Mfg. Co.
KNOWLES, HARRY..... Ph. B., Brown University, 1906. 113 Ft. Greene Place, Brooklyn, N. Y.	Sci.	Advertising, Atlas Portland Ce- ment Co.
LADD, MERRILL AUGUSTUS..... Jacksonville, Fla.	Mech.	Proprietor, Stinson Electric Co., 108 West Bay St.
MORRISON, CLIFFORD BREWSTER..... Minneapolis, Minn.	Sci.	Chemist, National Baking Insti- tute.
OWEN, WILLIAM FRAZIER..... Schenectady, N. Y.	Mech.	Engineering Department, General Electric Co.
PAYNE, EBENEZER..... M. D., Univ. Michigan, 1904. Glendora, Cal.	Sci.	Physician and Surgeon.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
PHILLIPS, WALTER CLARKE.....	Mech.	Instructor in English, Brown University.
Ph. B., Brown University, 1902.		
A. M., Brown University, 1903.		
Providence.		
REYNOLDS, ROBERT SPINK.....	Mech.	Assistant Engineer, Bridge Dept., N. Y., N. H. & H. R. R. Co.
Room 314, Gen. Office Bldg.,		
New Haven, Conn.		
RICE, MINNIE ELIZABETH		
(MRS. ROBERT J. SHERMAN).....	Sci.	At home.
Exeter Hill.		
SHERMAN, ABBIE GERTRUDE		
(MRS. BENJAMIN BARTON).....	Sci.	At home.
56 Pavilion Ave., Providence.		
SHERMAN, GEORGE ALBERT.....	Mech.	
THOMPSON, SALLY RODMAN		
(MRS. LEWIS BALCH, JR.).....	Sci.	At home.
Wakefield.		

1900

BRIGHTMAN, HENRY MAXSON.....	Mech.	President, General Manager Versailles Sanitary Fibre Mills, United Chemical Works, Hygiene Fibre Co.
200 Broadway, New York.		
CROSS, CHARLES CLARK.....	Mech.	President and General Manager, The Troy Body Co., Troy, O.
316 Schantz Ave., Troy, Ohio.		
ELDRED, JOHN RALEIGH.....	Mech.	Instructor in Mechanical Engineering, R. I. S. C.
Kingston.		
FISON, GERTRUDE SARAH		
(MRS. JOHN W. ROOT).....	Sci.	At home.
38 Harrison St., Taunton, Mass.		
FRY, JOHN JOSEPH.....	Sci.	Supervising Principal, Byram School and Hamilton Ave. School.
Greenwich, Conn.		
GODDARD, EDITH		
(MRS. LAWRENCE B. REED).....	Sci.	At home.
20 North St., Plymouth, Mass.		
KENYON, AMOS LANGWORTHY.....	Agr.	Dairyman.
Wood River Junction.		
MUNROE, ARTHUR EARLE.....	Sci.	Attorney-at-law, 49 Westminster St.
Ph. B., Brown University, 1902.		
41 George St., Providence.		
SOULE, RALPH NELSON.....	Sci.	Mgr., Gen. Service Dept., Mitchell Motor Co., 842 Main St., Racine.
Racine, Wisconsin.		
STEERE, ANTHONY ENOCH.....	Mech.	Resident Civil Engineer, New York State Canals.
79 Richland St.		
Rochester, N. Y.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
STILLMAN, LENORA ESTELLE.....	Sci.	Teacher.
1046 Greene Ave., Brooklyn, N. Y.		
TUCKER, BERTHA DOUGLASS.....	Sci.	Vocational Assistant Trade
109 Queensbury St., Boston, Mass.		School for Girls.
WHEELER, CHARLES NOYES.....	Sci.	Clerk, Wm. H. Haskell Manufac-
21 Cedar St., Pawtucket.		turing Co.
WILSON, JOSEPH ROBERT.....	Mech.	Surveyor.
184 Grace St., Auburn.		

1901

BRAYTON, CHARLES ANDREW.....	Agr.	Farmer.
Hope, R. F. D.		
BRIGGS, NELLIE ALBERTINE.....	Sci.	Stenographer, R. I. Hospital Trust
Providence.		Co.
BURGESS, CHARLES STUART.....	Mech.	Draughtsman, Brown & Sharpe
264 Sayles St., Providence.		Mfg. Co.
CLARNER, LOUIS GEORGE KARL, JR....	Sci.	Secretary, N. H. Bureau of Un-
3 Church St., Concord, N. H.		derwriters.
DAWLEY, EDNA ETHEL		
(MRS. GEORGE W. WHITFORD).....	Sci.	At home.
Wakefield, R. F. D.		
DENICO, ARTHUR ALBERTUS.....	Sci.	Telephone Engineer, with Ameri-
Ph. B., Brown University, 1904.		can Tel. and Tel. Co.
195 Broadway, New York City.		
*JAMES, RUTH HORTENSE		
(MRS. HERBERT E. ROUSE).....	Sci.	
SHERMAN, ANNA BROWN		
(MRS. JOSEPH R. WILSON).....	Sci.	At home.
184 Grace St., Auburn.		
SHERMAN, ELIZABETH AGNES.....	Sci.	Secretary to N. L. Amester, 209
136 Sutherland Road, Brookline, Mass.		Washington St., Boston.
SMITH, HOWARD DEXTER.....	Sci.	Instructor in Chemistry, Evening
A. M., Brown University, 1904.		School of Lowell Textile
Ph. D., Tufts College, 1906.		School; Chief Chemist, Carle-
669 Westford St., Lowell, Mass.		ton & Hovey Co.
STEERE, ROWENA HOXIE.....	Sci.	At home.
102 Sassafras St., Providence.		
*WILBY, JOHN.....	Sci.	

1902

CLARKE, LATHAM.....	Chem.	Director, Institute de Quimica
A. M., Brown University, 1903.		Industrial.
Ph. D., Harvard University, 1905.		
Montevideo, Uruguay.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FERRY, OLIVER NEEDHAM..... 111 Coniston Ave., Waterbury, Conn.	Mech.	Superintendent, Waterbury Tool Co.
MAXSON, RALPH NELSON..... Ph. D., Yale University, 1905. 366 Transylvania Park, Lexington, Ky.	Chem.	Professor Inorganic Chemistry, State University.
PITKIN, ROBERT WILLIAM..... Rockville, Conn., R. F. D. No. 1.	Mech.	Farmer.

1903

BARBER, KATE GRACE (Mrs. A. L. WINTON)..... Ph. D., Yale University, 1906. Wilton, Conn.	Gen. Sci.	At home.
CONANT, WALTER AIKEN..... Temple, N. H.	Agr.	Dairying, The Conant and Clem- ent Farms, Hillsboro County.
GODDARD, WARREN, JR..... Graduate, New Church Theological School, 1907. 229 S. Walnut St., Urbana, Ohio.	Mech.	Instructor in Physics, Chemistry and Philosophy of Science, Ur- bana Univ. School.
KEEFER, EDITH CECILIA..... 31st and Grove Sts. Oakland, Cal.	Biol.	Social Service Worker, Alameda County, Public Health Centre.
KENT, RAYMOND WARREN..... A. M., Harvard University, 1904. 1237 Ridge Road, Canton, Ohio.	Chem.	Works Manager, The Republic Rubber Corp.
TEFFT, ERNEST ALLEN..... 87 Larch St., Providence.	Elec. Eng.	Electrical Contractor, 87 West- minister St.

1904

BALLOU, WILLARD ALGER..... B. S., Columbia University, 1913. M. A., Columbia University, 1915. 335 Lafayette Ave., Brooklyn, N. Y.	Biol.	Instructor in Mathematics, Pratt Institute.
QUINN, MARY LOUISE..... Wakefield, R. I.	Biol.	At home.
RODMAN, WALTER SHELDON... M. S., R. I. S. C., 1907. M. S., Mass. Inst. Tech., 1909. Box 222, University, Va.	Elec. Eng.	Professor of Electrical Engineer- ing, University of Virginia.

1905

CHAMPLIN, SARAH ELIZABETH (Mrs. HAROLD L. FRIEND)... 306 Smith St., Edgewood.	Gen. Sci.	At home.
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NAME AND ADDRESS.	COURSE.	OCCUPATION.
DOW, VICTOR WELLS.....	High. Eng.	Special Sales and Advertising Representative, John Warren Watson Co., of Philadelphia.
14 Sewall Woods Road, Melrose Highlands, Mass.		
GILMAN, JEAN.....	High. Eng.	Assistant to Director of Trade School, Hampton Institute.
Hampton, Va.		
*HARRALL, NELLIE ARMSTRONG (MRS. B. H. ARNOLD).....	Gen. Sci.	
Graduate, Sargent School of Physical Education, 1909.		

1906

ARNOLD, BENJAMIN HOWARD..	Elec. Eng.	Asst. Chief Engineer, Fairbanks, Morse Co.
516 College St., Beloit, Wisconsin.		
*BERRY, WALLACE NOYES....	Elec. Eng.	
ELKINS, MARION GRAHAM.....	Gen. Sci.	Teacher.
Ph. D., Yale University, 1912.		
10 Moody St., Amesbury, Mass.		
HARDING, LEE, LAPLACE.....	High. Eng.	Sales Dept., Lauders, Frary & Clark, New Britain, Conn.
52 Robbins Ave., New Britain, Conn.		
KEYES, FREDERICK GEORGE.....	Chem.	Director Research Laboratory, Physics and Chemistry, Mass. Inst. of Technology.
Sc. M., Brown University, 1907.		
Ph. D., Brown University, 1909.		
12 Mellen St., Cambridge, Mass.		
NICHOLS, HOWARD MARTIN...	Elec. Eng.	Mgr. Conveying and C. I. Fan Dept., B. F. Sturtevant Co.
14 Clifford St., Readville, Mass.		
SISSON, CORA EDNA (MRS. BENJAMIN D. BUSH)..	Gen. Sci.	At home.
M. S., Brown University, 1910.		
Lakewood, N. J.		
WILKINSON, ALBERT EDMUND.....	Agr.	Vegetable Specialist.
M. Agr., R. I. State College, 1916.		
Connecticut Agricultural College.		
Storrs, Conn.		

1907

BARBER, ARTHUR HOUGHTON.	Mech. Eng.	Inspector for Associated Factory Mutual Fire Insurance Cos., Boston, Mass.
East Greenwich.		
COGGINS, CALVIN LESTER.....	Elec. Eng.	Assistant Professor of Physics and Elec. Eng., R. I. S. C.
Kingston.		
FERRY, JAY RUSSELL.....	High. Eng.	
Warren.		
KELLOGG, DAVID RAYMOND.....	Chem.	Captain, Ordnance R. C., Inspection Division.
Ph. D., Ohio State University, 1912.		
Albemarle Bldg., 24th and Broadway, New York.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
KENDRICK, WINFIELD SMITH..Elec. Eng. 236 So. Robey St., Chicago, Ill.		Gen. Sales Mgr., Victor X-Ray Corporation.
LAMOND, JOHN KENYON.....Elec. Eng M. A., Yale University, 1908. Ph. D., Yale University, 1910. 3 Pennsylvania Ave., Philadelphia, Pa. Brookline, Upper Darby, Branch P. O.		Engineering Dept., Bell Telephone Co. of Pa.
LEWIS, HARRY REYNOLDS.....Agr. M. Agr. R. I. S. C., 1916. Davisville.		Farmer and Writer.
*MACOMBER, MINER SANFORD.....Chem.		
TUCKER, ETHEL ALDRICH (MRS. LITTLETON C. HAYDEN) Gen. Sci. 28 Sadler Ave., Pittsfield, Mass.		At home.

1908

DREW, JOSEPH DRAKE.....Chem. Fairfield, Alabama.		Coke Inspector, Tenn. Coal, Iron R. R. Co.
FIELD, CLESSON HERBERT.....Civ. Eng. C. E., Lehigh University, 1909. 272 Washington Highway, Snyder, N. Y.		Contracting Engineer, Buffalo Structural Steel Co., Buffalo, N. Y.
FISKE, HERBERT ANDREW.....Elec. Eng. 172 Bates St., New Bedford, Mass.		Richmond St. Garage, New Bedford, Mass.
GARDINER, ROBERT FRANKLIN.....Chem. M. S., George Washington University, 1914. Apt. 202, 1511-22nd St., N. W. Washington, D. C.		Research Chemist, Bureau of Soils, U. S. Dept. of Agriculture.
GORY, EDWARD ALLEN.....Elec. Eng. 5 City Hall Square, Lynn, Mass.		Electric Engineer, General Electric Co., Lynn, Mass.
KENYON, SUSAN ELNORA (MRS. FRED K. CRANDALL).....Biol. Kingston.		At home.
MITCHELL, CLOVIS WILLIAM....Civ. Eng. Greenville.		Superintendent of Schools.
ROSE, ORPHA LILLIE (MRS. HENRY A. CONGDON)...Gen. Sci. Kingston.		Teacher.
SHELDON, GEORGE WARE.....Elec. Eng. Wakefield.		With Westinghouse Electric Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SHERMAN, MARY ALBRO (MRS. FRED M. MANLY).....Agr. West Fairlee, Vermont.	Agr.	At home.
SMITH, JOHN LEBROC.....Elec. Eng. A. M., Brown University, 1915. 19 Walker Ave., Saylesville.	Elec. Eng.	Superintendent of Schools in Town of Lincoln.
WHIPPLE, LUCIUS ALBERT.....Civ. Eng. 1142 Smith St., Providence.	Civ. Eng.	Superintendent, State Home and School.

1909

CARGILL, RHOBIE LUCELLA.....Appl. Sci 256 President Ave., Providence.	Appl. Sci	Teacher of Science, Technical High School.
CRAIG, JAMES MCINTYRE.....Agr. Casilla Correo 23, Rosario de Sta. Fe, Argentina.	Agr.	Gardener and Merchant.
CRANDALL, FRED KENYON.....Agr. Kingston.	Agr.	Assistant, Agronomy Dept., Ex- periment Station, R. I. S. C.
FRENCH, HENRY FRANK.....Elec. Eng. 57 Mall St., West Lynn, Mass.	Elec. Eng.	Turbo-Generator Engineer, Gen- eral Electric Co.
HOWE, ALBERT MENDEL.....Elec. Eng. 1 Rockland St., Brockton, Mass.	Elec. Eng.	Inspector, Bay State St. Ry. Co.
KNOWLES, WALTER.....Civ. Eng. Kingston.	Civ. Eng.	Asst. Engineer, Water Supply Board, City of Providence.
LEE, ALFRED ROGERS.....Agr. Decatur Heights, Landover, Md.	Agr.	Animal Husbandman, in Poultry Investigation, Bureau of Animal Industry, U. S. Dept. of Agri- culture.
MORAN, WALTER JOHN.....Civ. Eng. Oakdale, Conn.	Civ. Eng.	Farmer.
MOYER, LOUIS EARL.....Civ. Eng. Seneca Falls, N. Y.	Civ. Eng.	Civil Engineer, State of New York, Commission of Highways.
ROCKWELL, RUBY BELL (MRS. JOHN O'LOUGHLIN).....Chem. Medford St., R. F. D., No. 1, Binghamton, N. Y.	Chem.	At home.
SMITH, ELMER FRANCIS.....Elec. Eng. 331 Walnut St., Roselle Park, N. J.	Elec. Eng.	Supt. of Public Schools.
TISDALE, HARRY ROBERT.....Chem. Mass. Inst. Technology, 1911. 58 Georgiana St., New London, Conn.	Chem.	Supt., Dye House, Brainerd & Armstrong, Silk M'f'rs.
TUCKER, ELLEN CAPRON.....Gen. Sci. Kingston.	Gen. Sci.	Primary Teacher, Peacedale.

1910

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BURGESS, PAUL STEERE.....	Chem. Eng. M. S., University of Illinois, 1911. Ph. D., Univ. of California, 1920. Kingston.	Professor of Chemistry; Chemist, Experiment Station, R. I. S. C.
CARPENTER, RANDOLPH HAYWOOD,	El. Eng. 10 First St., White Plains, N. Y.	Manager, N. Y. Office of Nash Engineering Co., New York City, 350 Madison Ave.
CUMMINGS, ROBT. WINTHROP,	Mech. Eng. 386 Federal St., Greenfield, Mass.	Supervisor of Production Control, Greenfield Tap & Die Corpora- tion.
GOODALE, RALPH WALDO.....	Civ. Eng. M. S. R. I. S. C. 1920. 55 Gilbert Ave., New Haven, Conn.	Chief Draftsman, Con. Dept., N. Y., N. H. & H. R. R. Co.
HARDY, JOHN IRA.....	Gen. Sci. Ph. D., Univ. of Missouri, 1917. 50 Glenwood Road, Albany, N. Y.	Textile Chemist, Albany Felt Company.
HEATH, BERTHA MAY.....	Agr. M. S. R. I. S. C. 1920. Foxboro, Mass.	Laboratory Assistant, State Hos- pital.
KENYON, AMOS HARRIS.....	Elec. Eng. 131 Abbott St., Providence.	Traffic Chief, American Tel. & Tel. Co.
LAMOND, HELEN SCOTT (MRS. R. H. CARPENTER)...	Gen. Sci. 632 East 26th St., Brooklyn, N. Y.	At home.
MOUNCE, LEROY LEIDMAN.....	Agr. South Woodstock, Vt.	Manager, Upwey Farms.
PEABODY, GEORGE ABBOTT.....	Elec. Eng. Box 553, Schenectady, N. Y.	Care International Gen. Elec. Co., 23 Water St., Yokohama, Japan.
SHERMAN, JOHN LELAND.....	Agr. R. F. D. 147, Mansfield, Mass.	Farmer.
SMITH, HIRAM JAMESON.....	Civ. Eng. Fort Worth, Texas.	With John B. Hawley, Consult- ing Engineer.
WAGNER, ALBERT FREDERIC...	Elec. Eng. M. S. Purdue Univ., 1913. Box 516, Annapolis, Md.	Assoc. Professor of Elec. En- gineering and Physics, U. S. Naval Academy.
WHEELER, RICHARD HOWES...	Elec. Eng. 142 North Union St., Olean, N. Y.	General Manager, Olean, Brad- ford & Salamanca Co.
WORRALL, DAVID ELBRIDGE.....	Chem. M. A., Harvard Univ., 1911. Ph. D., Harvard Univ., 1919. 7 Edison Ave., Medford Hillside, Mass.	Asso. Professor of Organic Chemistry, Tufts College.

1911

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ANDREWS, CARMEN NICHOLS... Wickford, R. I.	Appl. Sci.	Teacher, A. P. Hoyt School, East Providence.
ANGILLY, CHARLES ENOCH, JR.. 610 Fir Ave., Inglewood, Cal.	Civ. Eng.	Draftsman, Dept. of Public Service, Bureau of Water Works. Los Angeles, Cal.
EASTERBROOKS, HAROLD ARNOLD.... 280 Benefit St., Providence.	Biol.	Student, Tufts Medical School, Boston.
EASTERBROOKS, LOUIS CHURCH..... 280 Benefit St., Providence.	Agr.	In business.
GILCHREST, CLYDE RONALD... 618 Centre St., Wilkinsburg, Pa.	Elec. Eng.	Commercial Engineer, Supply Dept., Westinghouse Electric and Manufacturing Co.
HARRIS, BURTON KENNETH.. R. F. D., Saylesville.	Chem. Eng.	Lime Manufacturer.
HEALY, PATRICK JOSEPH..... 400 Madison Ave., New York.	Agr.	Gardener, care Ralph Armstrong.
KENT, ROBERT WILLARD..... 29 Morseland Ave., Newton Centre, Mass.	Mech. Eng.	Construction Engineer, Division Chief, with Cooley & Marvin Co., Boston, Mass.
MINOR, ARTHUR JACOB..... C. E., R. I. S. C., 1915. 31 Milk St., Boston, Mass.	Civ. Eng.	Inspector, Factory Mutual Fire Insurance Co.
NEAL, WILLIAM THOMAS..... Walton, N. Y.	Agr.	Proprietor of Tripp Floral Co.
ROBINSON, BENJ. ROWLAND.. 1 Nildley Ave., Worcester, Mass.	Mech. Eng.	Chief Draftsman, Sanford-Riley Stoker Co.
RUPRECHT, RUDOLF WILLIAM.. 1060 W. University Ave., Gainesville, Fla.	Appl. Sci.	Chemist, Florida Agricultural Experiment Station.
SAFFORD, HOWARD ALBERT..... National Soldiers' Home, Maine.	Agr.	Chief Gardener.
TUCKER, HARRIET TABER (MRS. DAVID E. WORRALL).. 7 Edison Ave., Medford Hillside, Mass.	Gen. Sci.	At home.
*WADE, CEYLON RAYMOND....	Civ. Eng.	

1912

BARLOW, HENRY NEWELL..... Wassaic, N. Y.	Elec. Eng.	Dairy Farmer.
BIGELOW, CARLE MUZZY..... 16 Chestnut Terrace, Newton Centre, Mass.	Appl. Sci.	Member of Firm, Cooley & Marvin Co., 15 Ashburton Place, Boston, Mass.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CALDWELL, DOROTHY WALCOTT, Civ. Eng. M. S., R. I. S. C., 1914. M. S., Univ. of Mich. 1920. 226 South 12th St., Ann Arbor, Mich.		Assistant in Hygiene, and Graduate Student, University of Michigan.
CLARKE, PHILIP HARRISON....Elec. Eng. 11 Washington Road, Scotia, N. Y.		Electrical Engineer, General Electric Co.
COBB, ELECTRA HENRIETTA (MRS. JOHN L. SHERMAN), Home Econ. R. F. D. 147, Mansfield, Mass.		At home.
DOLL, WALTER.....Mech. Eng. Granville, New York.		With Sheldon Slate Products Co.
*HENDERSON, ETHEL PIERCE (MRS. E. K. WILCOX).....Appl. Sci.		
KENYON, ANNIE ELIZA (MRS. S. C. WEBSTER, JR.)..Appl. Sci. R. F. D., West Kingston.		Teacher.
LARKIN, CHARLES HERBERT....Civ. Eng. 56 Bower St., West Medford, Mass.		Civil Engineer, with Real Estate Dept., Boston & Maine Railroad.
NUTTING, BERTHA MAY (MRS. L. G. LENHAM)..Home Econ. 163 Norwalk Ave., Buffalo, N. Y.		At home.
PATTERSON, ARTHUR JOHN...Elec. Eng. 2101 North Ave., Richmond, Va.		Supervisor of Construction, Signal Dept., Chesapeake & Ohio Ry.
RICHMOND, FRED ALLEN.....Elec. Eng. 17 Stanley Place, Yonkers, N. Y.		Mech. Valuation Pilot, N. Y. Central Railroad Co., Grand Central Terminal, New York City.
SHERMAN, JR., GEORGE WM..Elec. Eng. M. S., Purdue Univ., 1914. 4 Murdock Flats, West Lafayette, Ind.		Assistant Professor of Physics, Purdue University.
*SLATER, ALLAE CORDELIA (MRS. ARTHUR J. MINOR), Home Econ.		
WARNER, DAVID EDMOND, JR.....Agr. Storrs, Conn.		Associate Professor, Poultry Husbandry, Conn. Agricultural College.
WEBSTER, SAMUEL C., JR.....Agr. R. F. D., West Kingston.		Farmer.
WHELAN, WILLIAM JOSEPH...Appl. Sci. Kingston.		Supt. of Buildings, R. I. S. C.

1913

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALEXANDER, RALPH IRWIN... Cromwell, Conn.	Mech. Eng.	A. N. Pierson, Inc.
BATES, REUBEN CHARLES..... Memorial Hospital, Pawtucket.	Civ. Eng.	Memorial Hospital, Pawtucket.
BRETT, CLARENCE ELMER..... Kingston.	Agr.	Instructor in Poultry, R. I. S. C.
BRIDEN, FRANK HAROLD..... Port Hope, Ontario, Canada.	Mech. Eng.	Supt. Dominion Works, Nicholson File Co.
COHEN, BENJAMIN..... 46 Locust St., New Bedford, Mass.	Elec. Eng.	Employment Manager, National Spun Silk Co.
CONGDON, ESTHER LOOMIS (MRS. A. L. REYNOLDS).. 339 Cooke St., Waterbury, Conn.	Home-Econ.	At home.
CORR, JOHN WILLIAM..... East Greenwich.	Appl. Sci.	Treasurer, The Greenwood Textile Supply Co.; Manufacturing Chemist.
ELKINS, DOROTHY DEARBORN (MRS. ROBERT W. KENT).. 29 Morseland Ave., Newton, Mass.	Home Econ.	At home.
ELKINS, MARGUERITE WHITE, Home Econ. (MRS. ERROLL J. BLANCHARD), Blue Ridge Ave., Saugus, Mass.	Home Econ.	At home.
HART, CRAWFORD PECKHAM..... 130 Sycamore St., Somerville, Mass.	Agr.	With Federal Board for Vocational Education.
IRONS, WALTER COLWELL..... North Scituate, R. F. D. No. 2.	Agr.	Farmer.
KYLE, THOMAS..... Box 159, Balboa, Canal Zone.	Agr.	Marine Plumber.
MITCHELL, IRVING CALVARY... A. M., Brown Univ., 1920. Valley Falls.	Appl. Sci.	Superintendent of Schools. Town of Cumberland.
REDDING, WILLIAM FRANCIS.. Porto Rico.	Elec. Eng.	Second Lieutenant, Infantry.
REINER, WALDO..... 45 Strong Place, Brooklyn, N. Y.	Civ. Eng.	With Wall Rope Works, Inc., Beverly, N. J.
REYNOLDS, ARTHUR LESLIE... Sc. B., Brown Univ., 1915. 399 Cooke St., Waterbury, Conn.	E'ec. Eng.	Teacher, Mathematics and Science, Wilby High School
SLOCUM, GEORGE EDWIN..... 75 W. Mohawk St., Buffalo, N. Y.	Elec. Eng.	Sales Engineer, McCarthy Bros. & Ford.
*STECK, FRANK.....	Chem. Eng.	

NAME AND ADDRESS.	COURSE.	OCCUPATION.
TURNER, WALTER RAYMOND... 21 Sarah St., Providence.	Appl. Sci.	Asst. Mgr., Glenlyon Yarn Dye Works, Phillipsdale.
WILCOX, ERROLL KENYON..... Peace Dale.	Civ. Eng.	Principal, South Kingstown High School.
WOOD, SUSIE STANTON..... Holyoke City Hospital, Holyoke, Mass.	Home Econ.	Dietitian.
YOUNG, JAMES HANNIBAL..... 151 Joralemon St., Brooklyn, N. Y.	Appl. Sci.	With National City Bank of New York.

1914

ALDRED, JAMES HILTON..... Ashton.	Mech. Eng.	Chemist, Woonsocket Rubber Co.
ANDERSON, WILLIAM EDWARD..... 254 Orchard St., New Haven, Conn.	Agr.	Graduate Student in Physiological Chemistry, Yale University.
ASPINWALL, FREDERICK OTTO, Chem. Eng. 637 Main St., Pawtucket.	Chem. Eng.	Fire Prevention Engineer.
BAXTER, FRANK HOWARD.... 1109 No. Broadway, Yonkers, N. Y.	Mech. Eng.	Foreign Trade Representative, The National City Bank of New York.
BENSON, ROBERT JOHN..... 5963 Maple Ave., St. Louis, Mo.	Elec. Eng.	Electrical Maintenance and Construction Engineer, Wagner Elec. Mfg. Co.
*BOULESTER, EDWARD JAMES... BROWNING, HAROLD WILLIAM... M. S., Univ. of Wisconsin, 1916. Ph. D., Univ. of Wisconsin, 1920. Kingston.	Appl. Sci.	Professor of Botany, R. I. S. C.
CONNOR, THOMAS ROWLEY.... Cleveland, Ohio.	Civ. Eng.	Asst. Engineer, City Filter Plant.
DAVIS, HENRY ELLIS..... 17 Custom House St., Providence, R. I.	Agr.	17 Custom House St., Providence, R. I.
ESTY, JAMES RUSSELL..... M. S., Brown University, 1915. Ph. D., Brown Univ., 1918. 623 Varnum St., N. W., Wash- ington, D. C.	Chem. Eng.	Bacteriologist National Canners' Association, Research Laboratory.
FINCH, MYRON WHITMARSH..... M. S., Brown Univ., 1920. 24 High St., Buffalo, N. Y.	Agr.	Instructor in Biochemistry, University of Buffalo.
FORD, HELEN WHEELER.... 1081 South St., Roslindale, Mass.	Home Econ.	Graduate Student at Yale in Dept. of Public Health.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HAWKINS, MYRON ANGELL.....	Agr.	Farmer.
Chepachet, R. I.		
JONES, CARLTON WALKER.....	Civ. Eng.	Engineer, with Libby & Johnson.
North Scituate, R. I.		
KARMANN, HERMAN HARRY...	Civ. Eng.	Surveyor.
156 Cardoni St., Detroit, Mich.		
KINNEY, LORENZO FOSTER, JR..	Appl. Sci.	State Leader Boys' and Girls'
M. S., Univ. of Wisconsin, 1915.		Clubwork, Extension Service,
Kingston.		R. I. S. C.
REINER, FRIEDA.....	Home Econ.	Teacher, Home Economics.
M. A., Columbia Univ., 1921.		
45 Strong Place, Brooklyn, N. Y.		
REINER, HERBERT.....	Agr.	With American Agricultural
Portsmouth, N. H.		Chemical Co., 92 State St.,
		Boston.
ROSSI, LOUIS.....	Civ. Eng.	Assistant Engineer, Water Works
57 Oak St., Westerly.		and Sewers Dept.
SAFFORD, EDITH MARIE		
(MRS. HERBERT REINER)...	Home Econ.	At home.
Portsmouth, N. H.		
SULLIVAN, JOHN LEO.....	Mech. Eng.	Head of Drafting Dept., Voca-
9 Church Road, Newton, 58, Mass.		tional High School.
TULLY, WILLIAM HENRY.....	Appl. Sci.	Farmer.
Peace Dale.		
TURNER, HARVEY ROBERT.....	Civ. Eng.	Instructor in Mathematics, Bishop
Marshall, Texas.		College.
WEBB, WILLIAM HARRY.....	Elec. Eng.	General Engineering and Consult-
90 West St., New York City.		ing, Moody Engineering Co.,
		Inc.
WEBSTER, EARL CLIFTON.....	Civ. Eng.	Principal Grammar School.
25 Prospect St., Auburn.		

1915

BALDWIN, GEORGE HOLLAND.....	Agr.	Salesman, Pawtucket Rendering
Pawtucket.		Co.
BARNEY, RAYMOND LIVINGSTON.	Appl. Sci.	Director and Supt., U. S. Fish-
Fairport, Iowa.		eries Biological Station.
BELFIT, ROBERT WILLIAM....	Chem. Eng.	Chem. Engineer, Scovill Mfg. Co.
328 Farmington Ave.,		
Waterbury, Conn.		
BORDEN, NORMAN HARRISON,	Chem. Eng.	Chemist, Standard Chemical
Womelsdorf, Pa.		Works.
BRECHIN, JOHN.....	Mech. Eng.	Efficiency Engineer, Nat. Tube
42 Colonial Apartments, Elyria, Ohio.		Co., Lorain Plant.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BROWNELL, KENNETH ALLEN, Chem. Eng. 11 Rutgers Place, Passaic, N. J.		Chief Chemist, Standard Bleachery Co., Carlton Hill, N. J.
COLEMAN, CARL LAFAYETTE.....Agr. 20 Park Place, Winsted, Conn.		Instructor in Agriculture, Gilbert School.
DODGE, WILLIAM EARL.....Civ. Eng. Block Island.		Ensign, Executive Officer on Submarine Chaser, No. 294, care Postmaster, N. Y.
GATES, CURTIS WOLCOTT.....Chem. Eng. King St., Groveland, Mass.		Asst. Sec., Employers' Assoc. of North Jersey.
HALL, CARLISLE.....Agr. 5 Wendell St., Providence.		Instructor in Mathematics, Warwick High School.
HARDING, ADA LAPLACE....Home Econ. Ansonia, Conn.		In charge of Domestic Science in Public High School.
HARRIS, LEON IRVING.....Elec. Eng. 465 Lycaste Ave., Detroit, Mich.		With Chalmers Motor Co.
HUDSON, ROYAL CARLTON....Appl. Sci. 6 Blackwood St., Boston, 17, Mass.		Student, Harvard Medical School.
HUNTER, ALBERT CLAYTON....Appl. Sci. Sc. M., Brown Univ., 1917. Ph. D., Brown Univ., 1918. 816 B St., S. W., Washington, D. C.		Bacteriologist, Bureau of Chemistry, Dept. of Agr.
JACKOWITZ, JOHN LOUIS.....Appl. Sci. 347 Orange St., New Haven, Conn.		Medical Student, Ya'e University Medical School.
KEITH, LAWRENCE FULLER.....Agr. Waldron, Arkansas.		Smith-Hughes Vocational Agricultural Instructor.
KILVIN, ALFRED PATRICK.....Elec. Eng. 43 School St., No. Attleboro, Mass.		Student in Graduate School, Harvard University.
LENNOX, FRANK JOSEPH....Chem. Eng. 48 Front St., Woonsocket.		Manufacturer and Dealer in Dye-stuffs, Oils, Soaps and Chemicals.
MEADE, JOHN EDWARD.....Civ. Eng. 142 Arch St., Philadelphia, Pa.		Construction Engineer, with Agr. Chemical Co.
MILLER, WESLEY CLIFTON....Elec. Eng. 7 Maple Court, Brooklyn, N. Y.		Supervising Engineer, Western Electric Co., 463 West St., New York.
NICHOLS, JOSEPH ELDON....Mech. Eng. Woonsocket.		Second Lieutenant, Field Artillery, U. S. Army.
NORDQUIST, HARRY O. VALDIMAR, Civ. Eng. 89 Hamlin St., Providence.		Civil Engineer.
PARKER, RALPH LANGLEY.....Agr. Sc. M., Brown Univ., 1917. Ames, Iowa.		Student, Iowa State College; Instructor in Science, Iowa State College.
WATSON, ADELAIDE GILBERT (MRS. FRANK H. BRIDEN). Home Econ. Port Hope, Ontario, Canada.		At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WHITTAKER, LEROY ALLEN.... Watervliet Arsenal, N. Y.	Elec. Eng.	Captain, C. A. C.
WILCOX, HAROLD CLAYTON..... 1495 Franklin Ave., Columbus, Ohio.	Agr.	Teacher of Science, Columbus Academy.

1916

ALDRICH, DANIEL GASKILL..... Pittsfield, N. H.	Agr.	Head Master, Coe's Academy, and Pittsfield High School.
BECKER, WILLIAM JOS. JR.... 225 So. Van Dien Ave., Ridgewood, N. J.	Mech. Eng.	Chief Inspector, Inspection Div., Ordnance Dept., U. S. A.
BURR, DOROTHY ISABELLE.... (MRS. THOMAS W. FREEMAN), Rockland, Ill.	Home Econ	At home.
CARLTON, EVERETT AUGUSTUS..... Havre de Grace, Md.	Agr.	Chemist, Chemical Warfare Service, Edgewood Arsenal, Md.
CHANTLER, AMBROSE ROYLE.. 130 West Ave., Pawtucket.	Chem. Eng.	Chemist, with E. I. DuPont De Nemours Co., Dyestuffs Div.
CONYERS, CLARENCE JOHN..... Seekonk, Mass.	Agr.	Postmaster.
CORDIN, GILBERT RALPH..... 16 Harvard Ave., Providence.	Chem. Eng.	Secretary, New England Hosiery Co.
CURRAN, EMILIE MAY..... (MRS. NORMAN H. BORDEN), Womelsdorf, Pa.	Home Econ.	At home.
DANIELS, HENRY FALES..... 17 Burlington St., Providence.	Civ. Eng.	Engineer, with C. D. Paige, Insurance.
FARON, FRANCIS ALOYSIUS.... 60 Glenwood Blvd., Schenectady, N. Y.	Elec. Eng.	Designing Engineer, General Electric Company.
FIELD, ERNEST GEORGE..... 163 Lenox Ave., Providence.	Mech. Eng.	International Time Recording Co., 170 Summer St., Boston, Mass.
*FINE, SOLOMON..... M. S., R. I. S. C., 1917.	Appl. Sci.	
FRASER, DEAN BLENUS..... 178 Tremont St., Boston, Mass.	Civ. Eng.	Asst. Estimating Engineer, Turner Construction Co.
FREEMAN, THOMAS WILLIAM.. 'Camp Grant, Rockland, Ill.	Civ. Eng.	First Lieutenant, Co. B, 52nd Inf.
GLASHEEN, RALPH EARLE..... 251 West 71st St., New York City.	Civ. Eng.	Asst. Superintendent Turner Construction Co.
*HANLIN, WILLIAM FRANK.....	Agr.	
HENRY, JAMES MURRAY..... Paintsville, Kentucky.	Mech. Eng.	Asst. to President, Bed Rock Petroleum Co. and Structure Oil Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HOLLEY, LEONARD STANLEY..... Wakefield.	Agr.	Farmer.
HOXSIE, ANNIE SARAH..... Canochet.	Home Econ.	Teacher, Derby High School, 150 Caroline St., Derby, Conn.
KELLY, HENRY CLINTON..... 769 Commonwealth Ave., Detroit, Mich.	Civ. Eng.	Engineer, with E. I. DuPont De Nemours, Wilmington, Del.
LAGERSTADT, SETH FREDERICK HADLEY, Brockton, Mass.	Agr.	Ensign, U. S. Naval Reserve.
LEWIS, WILLIAM EMANUEL..... 70 Anthony St., East Providence.	Agr.	Asst. Mgr., Providence Farmers Exchange, 16 So. Water St., Providence.
LLOYD, LESTER WILLIAM..... Suffield, Conn.	Agr.	Farmer.
LUSSIER, GEORGE EMILE..... 93 Highland Ave., Fitchburg, Mass.	Elec. Eng.	Engineer, Brown Bag Filling Ma- chine Co.
MCLEOD, LEANDER WALLACE..... Bridgeport, Conn.	Mech. Eng.	With Ashcroft Mfg. Co.
MEDBERRY, HENRY EDMUND.... 125 Parker Hill Ave., Boston, Mass.	Appl. Sci.	Bacteriologist, U. S. Public Health Service.
MEEARS, ETTA ELIZABETH (MRS. ERNEST G. FIELD).. 115 Northampton St., Easton, Pa.	Home Econ.	At home.
MILNES, CHARLES IRVING.... 59 Dewey St., Providence.	Chem. Eng.	Chief Chemist, Wanskuck Co.
PALMER, THEODORE ANDREW..... Lakeville, Conn.	Agr.	Principal, Indian Mt. School.
PARKER, CLARENCE HOWARD, Mech. Eng. 121 Oakley Road, Belmont, 78, Mass.		Mech. Draftsman, Package Con- fectionery Co., South Boston.
PRICE, MILTON HARRIS..... 29 Sessions St., Providence.	Agr.	First Lieutenant, Cavalry, Fort Sam Houston, Texas.
RANDALL, BERTHA ADELAIDE, Home Econ. 556 Cranston St., Providence.		File Executive.
RANDALL, PHINEAS MUNSELL..Elec. Eng. 41 Ardmore St., Springfield, Mass.		Assistant to Works Elec. Eng., Westinghouse El. Mfg. Co.
ROWELL, HOMER RANSOM..... Poultney, Vermont.	Agr.	Professor of Agriculture, Troy Conference Academy.
SELFERT, CHARLES EDWARD...Elec. Eng. 4141 Georgia Ave., Cincinnati, Ohio.		Service Engineer, Thomson Elec- tric Welding Co.
SHORT, CARLETON WEBB....Chem. Eng. Gretna, Louisiana.		Chemist.
VICTORY, THOMAS FRANCIS...Elec. Eng. Warren.		First Lieutenant, C. A. C.
WALMSLEY, EARL.....Chem. Eng. 95 Frances Ave., Akron, Ohio.		Goodyear Tire and Rubber Co.
YOUNG, VINCENT CASE.....Mech. Eng. Plainfield, N. J.		Testing Engineer, International Motor Co.

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NAME AND ADDRESS.	COURSE.	OCCUPATION.
AMES, ARNOLD WILLARD.....	Mech. Eng.	Engineer.
Preble, N. Y.		
ANDERSON, JOHN GORDON.....	Appl. Sci.	Student, Harvard Medical School,
Boston City Hospital, Boston, Mass.		Interne at Boston City Hospital.
ANTHONY, HAROLD CONGDON.....	Agr.	Production Dept., Eastern Malle-
58 Concord St., Waterbury, Conn.		able Iron Co., Naugatuck Branch.
BARTELS, HENRY ARTHUR.....	Agr.	Asst. Bacteriologist, New York
337 Madison Ave., Albany, N. Y.		State Dept. of Public Health.
BROADFOOT, HENRY HARRINGTON,		Physical Laboratory of Warwick
Centerville, R. I.	Chem. Eng.	Mills, Centerville, R. I.
BROWNE, ELIZABETH HOPE..	Home Econ.	Asst. State Leader of Home Dem-
232 Cottage St., Pawtucket.		onstration Agents Extension
		Service.
CLARK, JAMES ANDREW.....	Chem. Eng.	Instructor in Chemistry and Dye-
39 Salina St., Providence.		ing, R. I. School of Design.
COHEN, HARRY.....	Elec. Eng.	Attorney-at-Law, Barrister Bldg.,
1205 Clifton St., N. W.,		Washington, D. C.
Washington, D. C.		
DUNHAM, LESLIE LINCOLN.....	Agr.	Master, Hanover High School,
Norwich, Vt.		Hanover, N. H.
EASTERBROOKS, WILFRED ROSS,	Civ. Eng.	Draftsman, U. S. Engineer Office,
Peace Dale.		Providence.
EBBS, ROBERT ALLEN.....	Chem. Eng.	Second Lieutenant, 534th En-
34 Powell Ave., Newport.		gineers, Amer. Expd. Force.
FEARN, GEORGE ANDREW.....	Appl. Sci.	With Jencks Spinning Co.
71 Daniels St., Pawtucket.		
FLYNN, WILLIAM AUGUSTUS...	Civ. Eng.	Engineer, United Electric Light &
19 Kensington Ave., Jersey City, N. J.		Power Co. of N. Y.
GIBBS, RALPH WILLIAMS.....	Elec. Eng.	Plant Engineer, Lycoming Rubber
1156 Park Ave., Williamsport, Pa.		Co.
GODDARD, FRANKLIN PERRY...	Elec. Eng.	Shipbuilding, Fore River Plant,
29 Gould St., Newport.		Quincy, Mass.
HARRY, CHARLES EDWARD.....	Agr.	Instructor in Science, Bishop Col-
Marsha'l Texas.		lege.
HAWKINS, CLINTON DEXTER,	Chem. Eng.	Chemist, Page-Storms Drop
120 Springfield St., Chicopee, Mass.		Forge Co.
HILL, EDWIN DOUGLAS.....	Agr.	Farm Manager, Wawayanda
Andover, N. J.		Farms.
JOHNSON, CHARLES VARNUM...	Civ. Eng.	Highway Engineer, U. S. Dept.
515 14th St., N. W., Washington, D. C.		Agr.
KENDALL, DONALD JOHN.....	Agr.	Captain, 59th Co., 7th Regt., U. S.
201 Pleasant St., Brockton, Mass.		Marine Corps.
LAHN, ABRAHAM SAMUEL.....	Civ. Eng.	Assistant, Eng. Corps, Penn. R. R.
Care Penn. R. R. Co., Mansfield, O.		

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LAWRENCE, SAMUEL EUGENE... 22 Shirley Ave., Revere, Mass.	Appl. Sci.	Physical Director, Revere Schools.
LEBOEUF, ALBERT ALPHONSE... 354 Hood St., Fall River, Mass.	Appl. Sci.	Teacher.
McINTOSH, ALBERT EDWARD... 59 Lisbon St., Providence.	Civ. Eng.	Captain, Co. C, 15th Cavalry, Ohio Northern Univ., Ada, O.
PYNE, JAMES FRANCIS..... 12 Gifford St., Brockton, Mass.	Civ. Eng.	Ship Draftsman, Boston Navy Yard.
REDFERN, ERNEST ELMER... 1124 Fourth Ave., Ford City, Pa.	Chem. Eng.	Asst. Supt., Pittsburgh Plate Glass Co.
*REDFORD, DAVID ADAM.....	Mech. Eng.	
RIECKEL, GRACE LILLIAN (Mrs. LESTER W. LLOYD) .	Home Econ.	At home.
Tiverton.		
RODMAN, SAMUEL LYMAN.....	Agr.	Farmer.
Gould.		
SLOCUM, KENNETH MATTESON... 1105 Walnut St., Newton Highlands, Mass.	Civ. Eng.	Industrial Engineer, Cooley & Marvin Co.
SMITH, HAROLD BURLIN..... 25 Florence St., Brockton, Mass.	Appl. Sci.	Mechanical Cost Dept., W. F. Schrafft & Sons Corp., 160 N. Washington St., Boston, Mass.
TAYLOR, RAYMOND DOUGLAS.....	Agr.	Manager, Poultry and Fruit Farm.
Bedford, Mass.		
TEW, JOSEPH GARDINER..... 412 N. Eighth St., Manhattan, Kan.	Appl. Sci.	Instructor in Mech. Drawing, Kan- sas State Agricultural College.
THAYER, AUBREY HARVEY.... 1907 East 40th St., Cleveland, Ohio.	Elec. Eng.	Chief of Technical Branch, Ord- nance Dept.
TILLINGHAST, THEOSE ELWIN... 221 West First St., Dayton, Ohio.	Mech. Eng.	Aeronautical Mechanical Engineer, with Eng. Div., Air Service.
WANSKER, HARRY ABE..... 76 Quint Ave., Aliston, Mass.	Civ. Eng.	Production Manager for Lovejoy Mfg. Co.
WELLES, ASHBEL RUSSELL.....	Agr.	With Comstock, Ferre & Co.
Wethersfield, Conn.		
WILLIAMSON, JAMES HUGH.... Newport.	Civ. Eng.	First Lieutenant, 210th Co., 3rd Regt., U. S. Marine Corps, Santo Domingo City, D. R.
WISBEY, HERBERT ANDREW.....	Agr.	Asst. Principal, Colt Memorial High School.
706 Hope St., Bristol.		

1918

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BARTON, HENRY, JR..... 693 Hope St., Bristol.	Civ. Eng.	Agent in China, Foreign Service Class, Standard Oil Co. of N. Y., 25 East 11th St., N. Y. City.
BLAKE, NELSON EVERETT.... 117 Fourth St., Carney's Point, N. J.	Chem. Eng.	Chief Chemist, with Du Pont Powder Co.
BRIGHTMAN, MELVIN HAZARD..... 185 Albert Ave., Edgewood.	Agr.	With W. E. Davis & Co., Provi- dence.
CALL, ROY PORTER..... Stonington, Conn.	App. Sci.	Teacher of Mathematics, Stoning- ton High School.
CAMERON, LORNE ATWOOD.....	Agr.	Asst. Supt., Sexton Canning Co.
CHANDLER, RUTH WESTLAKE, Home Econ.		At home.
(MRS. NORMAN W. DOVE), 186 Gallup St., Providence.		
CONGDON, JOHN JEROME..... 98 Church St., Bristol.	Chem. Eng.	Instructor in Chemistry & Physics, West Warwick High School.
COYNE, SARAH ELIZABETH... 1126 Boylston St., Boston, Mass.	Home Econ.	Asst. Biological Chemist, Boston Floating Hospital.
DANEKER, JOHN LACHLAN... 86 Shaw Ave., Edgewood.	Mech. Eng.	Mgr. and Eng., Brass Products Foundry, Providence, R. I.
DEVINE, JAMES JOSEPH..... 2175 14th St., Troy, N. Y.	Mech. Eng.	Instructor in Mech. Engineering, Rensselaer Polytechnic Inst.
EDMISTON, IRMA RATHBUN... 4105 Live Oak, Dallas, Texas.	Home Econ.	Lab. Technician, "The Medical and Surgical Clinics," Dallas, Tex.
FAIRBANKS, GEORGE HENRY... Pottsville, Pa.	Elec. Eng.	District Mgr., New England Fuel and Supply Co.
GILLIS, WILLIAM ELLIS..... Box 616, Stonington, Conn.	Appl. Sci.	Principal High School.
GROVES, LESTER DAVIS..... Mt. Holley, N. J.	Agr.	Supervisor, Burlington Co. Cow- Testing Association.
HAGGARTY, CHAS. WILLIAM... Allenton.	Elec. Eng.	Weaver.
HASKELL, DOROTHY ESTELLE, West Barrington.	Home Econ.	Chemist and Bacteriologist, City Dept. of Milk Inspection, Provi- dence.
KINNEY, ESTHER LEE..... (MRS. CARROLL H. MAGOON), Blanton, Florida.	Home Econ.	At home.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LERMOND, CHARLES ELWYN.. 3408 34th Place, N. W., Washington, D. C.	Mech. Eng.	Draftsman, Civil Service, U. S. Nitrate Plant No. 1, Sheffield, Alabama.
LYNCH, DANIEL JOSEPH, JR.. Brockton, Mass. 266 South Common St., Lynn, Mass.	Mech. Eng.	With General Electric Co., Lynn Mass.
MASON, CHARLES EVERETT..... Peace Dale.	Agr.	Instructor in Agriculture, South Kingstown High School.
MEYER, ARTHUR HENRY FREDERICK, Chem. Eng. 139 Webster Ave., Providence.	Chem. Eng.	Chemist, Providence Gas Co.
SPARGO, RAYMOND ALEXANDER..... Box 473, Westerly.	Agr.	Farmer, Overhill Farm.
SPRINGER, FRANKLIN HOXSIE, 16 Hunter St., Providence.	Appl. Sci.	Asst. Chemist, Davol Rubber Co.
STILLMAN, HANNAH AMELIA, Lexington, Kentucky.	Home Econ.	Head of Home Economics, Ham- ilton College.
STONE, ALBERT..... 3 East 12th St., Wilmington, Del.	Appl. Sci.	Jackson Laboratory, E. I. Du Pont De Nemours & Co., Deep Water Point, N. J.
STRAND, HENRY RICHARD..... Newport.	Agr.	Farmer, Bethshan-in-the-Woods.
TORGAN, MILTON..... 49 Verndale Ave., Providence.	Appl. Sci.	Submaster, Warwick High School, Apponaug.
WALSH, JAMES RUSSELL.... 99 So. Robert B'vd., Dayton, O.	Mech. Eng.	Aeronautical Mech. Eng., McCook Field, Dayton, Ohio.
WANSKER, JOSEPH..... 1240 Cranford Ave., Lakewood, O.	Chem. Eng.	Chief Chemist, Master Builders Co.
WILDER, HAROLD KENNETH, 80 Maple St., West Roxbury 32, Mass.	Chem. Eng.	Research Assistant in Chemistry, Boston Floating Hospital.

1919

BURGESS, WAYLAND MCCOLLEY, Chem. Eng. 217 Dewey St., Worcester, Mass.	Chem. Eng.	Instructor in Chemistry, Worces- ter Polytechnic Institute.
CARGILL, DANIEL OLNEY..... Valley Falls, R. F. D. No. 2.	Civ. Eng.	Civil Engineer, 70 Church St., Dedham, Mass.
CARPENTER, EDWARD LEROY, Clemson College, S. C.	Mech. Eng.	Associate Professor of Mechan- ical Eng.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARPENTER, PHILIP MARTIN..	Elec. Eng.	Engineer, Hartford Electric Light Co. .
44 Ashley St., Hartford, Conn.		
CREEDON, MICHAEL VINCENT,	Mech. Eng.	
DALZELL, CHARLES DAVIES.....	Agr.	Headmaster, Weare High School.
Weare Centre, N. H.		
DOWLING, JOHN JOSEPH.....	Chem. Eng.	Engineer of Gas Operation, Baton Rouge Electric Co.
460 Convention St., Baton Rouge, La.		
GAMBLE, EDWARD HENRY....	Chem. Eng.	Chemist, with E. I. DuPont de Nemours Co.
61 Second St., Carney's Point, N. J.		
GARDNER, ANNA PECKHAM..	Home Econ.	At home.
(Mrs. JOHN H. LASELL),		
59 Bridgham St., Providence.		
HARRINGTON, HERMAN BATTEY.....	Agr.	Farmer.
Greene.		
HILDREDTH, CHARLES TEW....	Elec. Eng.	Fire Insurance Engineer, Factory Ins. Asso., Hartford, Conn.
Box 310, Wakefield.		
HOLLEY, ARTHUR TUCKER.....	Agr.	Truck and Transportation line between Wakefield and Providence.
Wakefield.		
IRONS, MERRILLA ALTHEA..	Home Econ.	At home.
(Mrs. CHARLES A. STEERE),		
Greenville, R. I.		
KEEGAN, LESLIE ARTHUR.....	Agr.	Instructor in Agronomy, R. I. S. C.
Kingston.		
KINNEY, HELEN WELLS....	Home Econ.	Asst. Laboratory Technician, Grace Hospital.
1418 Chapel St., New Haven, Conn.		
MARX, HOWARD EARLE.....	Civ. Eng.	Frank E. Waterman Co., Civil Engineers and Surveyors.
15 Sampson Ave., Providence.		
MITCHELL, JAMES ALBERT....	Elec. Eng.	Electrical Draughtsman, Hartford Electric Light Co.
1 Greene Terrace,		
East Hartford, Conn.		
MURPHY, JAMES ALOYSIUS..	Chem. Eng.	
MURRAY, RUTH GOODWIN...	Home Econ.	Home Demonstration Agent.
(Mrs. JOHN W. CRUICKSHANK),		
East Greenwich, R. I.		
NICHOLS, RUHAMAH ROBINSON,	Home Econ.	Laboratory Apprentice, N. Y. State Dept. of Health.
4 Ramsay Place, Albany, N. Y.		
O'BRIEN, CHARLES FRANCIS, Mech. Eng.		Assistant Engineer, with Western Union Telegraph Co.
195 Broadway, New York City.		
PETERSON, THURSTON WALDEMAR,		Superintendent, Sheldon Slate Products Co.
Mech. Eng.		
22 Mettowee St., Granville, N. Y.		Chief Dietitian, at Pennsylvania

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SHIPPEE, FLORENCE LOUISE, Home Econ. Eighth and Spruce Sts., Philadelphia, Pa.		Hospital.
SMITH, PRISCILLA DAcOSTA, Home Econ. 200 Park Ave., Woonsocket.		Dietitian, U. S. Public Health Service, Dwight, Ill.
SPENCER, LEANDER BURNSIDE, Chem. Eng. East Greenwich.		Musician.
SULLIVAN, CHAS. McMANUS, Chem. Eng. 19 Roanoke St., Providence.		Chemist, Providence Gas Co.
THORNTON, ALBERT ANGELL.....Agr. Box 25, R. D., Franklin, Mass.		Farming Instructor and Super- visor, Arnolds Mills.
WAUGH, GEORGE LINCOLN.....Agr. Durham, N. H.		Agent in Dairying, U. S. Dept. of Agriculture.
WELLS, LESTER EARL.....Elec. Eng. U. S. Coast Guard Cutter, Tuscarora, Key West, Florida.		Lieutenant of Engineers, U. S. Coast Guard.
YOUNG, MARGERIA LENORE..Home Econ. 1416 Chapel St., New Haven, Conn.		Technician, Pathological Labora- tory, Grace Hospital.

1920

BAKER, LOUISE.....Home Econ. 101 Spring St., Pawtucket.		Asst. Pathologist, Pawtucket Me- morial Hospital.
BEASLEY, DORALD DEWEY...Chem. Eng. 38 South Ave., Wappingers Falls, N. Y.		Chemical Engineer for Dutchers Bleachery.
BIGGS, FRANCIS LINCOLN....Mech. Eng. 4834 Cedar Ave., Philadelphia, Pa.		Engineering Assistant, Buildings Dept., Bell Telephone Company of Pennsylvania.
BRIGGS, FREDERIC ROBINSON.....Agr. 44 W. School St., Westfield, Mass.		Teacher in Hartford High School, Hartford, Conn.
CAMPBELL, EMILY CATHERINE, 712 Commonwealth Ave., Home Eco. Boston, Mass.		Clinical Executive, Good Clinic, Boston Dispensary.
CARNIE, WILLIAM BROWN....Elec. Eng. Lynn, Mass.		With General Electric Co.
CLARK, ARTHUR LINCOLN.....Agr. Forest Home, Ithaca, N. Y.		Student, Cornell University.
CLARKE, HORACE WILBUR....Mech. Eng. 4711 Hazel Ave., Philadelphia, Pa.		Engineer Traffic Dept., Bell Tele- phone Co. of Pa.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
COHEN, SAMUEL HARRY..... 24 Bellingham Ave., Beachmont, Mass.	Elec. Eng.	Electrical Tester, General Electric Co., West Lynn, Mass.
CRUICKSHANK, JOHN WILLIAM, 247 Cypress St., Providence.	Civ. Eng.	Inspector of Bridges and Buildings for Rhode Island Company.
DAMON, LOUISE ELMORE.... Washington, D. C.	Home Econ.	Assistant Dietitian, Food Service Dept. of U. S. Government Hotels.
DAWSON, WILLIAM..... 96 Lowell St., Methuen, Mass.	Civ. Eng.	Goulds Mfg. Co., Boston, Mass.
EDWARDS, MILDRED ELIZABETH, Kingston.	Home Econ.	Asst. Bacteriologist, State Board of Health, Providence.
GREENE, WHITNEY EASTMAN, 242 Ashland Ave., Buffalo, N. Y.	Mech. Eng.	Asst. Chief Engineer, H. G. Trout Co., Buffalo, N. Y.
GREENHALGH, FRANK ELMER.. Chepachet.	Civ. Eng.	U. S. Engineers' Office, Providence.
HASLAM, ARTHUR EDMOND..... 128 Congress Ave., Providence.	Agr.	Cow Tester, Providence County Farm Bureau.
HOLLEY, CHARLES POTTER... 527 W. Market St., York, Pa.	Mech. Eng.	Road Erecting Engineer, with York Mfg. Co.
HOLMES, JOHN FOSTER..... 23 Chapel St., Needham, Mass.	Agr.	In Fertilizer Sales Management Dept., Consolidated Rendering Co. of Boston.
HUDSON, ALBERT SPRAGUE..... 17 Constitution St., Bristol.	Agr.	Teacher, Vocational Agriculture, Colt Memorial High School.
KAPLAN, ISRAEL..... 131 Dudley St., Providence.	Appl. Sci.	Salesman, Kaplan's, Weybosset Diamond Co.
KNOTT, JR., JAMES EDWARD..... 351 Federal Building, Newport.	Agr.	County Agricultural Agent.
KOHLBERG, RUDOLF, HORTON..... Curtis Bay Hotel, Baltimore, Md.	Agr.	With F. H. Royster Fertilizer Co.
KWASHA, LEONARD JAMES... 269 Orms St., Providence.	Chem. Eng.	With Davol Rubber Co.
*LUTHER, GEORGE EDWARD.....	Appl. Sci.	
MALLOY, GEORGE EDWARD....	Mech. Eng.	
MARTELL, NUMAN ALLEN..... Lynn, Mass.	Elec. Eng.	With General Electric Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
MURPHY, MAURICE VINCENT, Mech Eng. 221 Fall St., Seneca Falls, N. Y.	In Sales Engineering Depart- ment, Gould Pump Co.	
NORTHUP, KENNETH LeROY..Elec. Eng. 5852 Florence Ave., Philadelphia, Pa.	Engineer, Traffic Dept., Bell Tele- phone Co. of Pa.	
PETERSON, ESTHER WILHELMINA, North Stonington, Conn.	Teacher at Appleton Academy, New Ipswich, N. H.	
PIHL, ROLAND TAYLOR.....Mech. Eng. 142 First St., Lowell, Mass.	Saco-Lowell Shops, Lowell, Mass.	
SEABURY, DOUGLAS BEVERIDGE.....Agr. Care Y. M. C. A., Charleston, South Carolina.	With Aghepoo Fertilizer Co.	
SISSON, ALBERT PECKHAM.....Agr. Trenton, N. J.	Tester, Mercer County Dairy Rec- ord Association.	
SMITH, HOWARD BUCKLIN....Appl. Sci. 552 Plainfield St., Providence.	Science Teacher, Greene, R. I.	
SPINK, HERBERT ELMER.....Civ. Eng. Box 26, Davisville.	Civil Engineer, Scituate Reservoir.	
FRANKLIN, H. (SPRINGER), 16 Hunter St., Providence.	Asst. Chemist, Davol Rubber Co., Providence, R. I.	
STILLMAN, ELISABETH.....Home Econ. Philadelphia, Pa.	Pupil Dietitian, Pennsylvania Hospital.	
THACKRAY, ELSIE LAW.....Home Econ. Newburyport, Mass.	Instructor in Science Newbury- port High School.	
TWEDELL, WILLIAM THEODORE.....Agr. Keene, N. H.	Cow-Test Supervisor, Farm Bureau.	
VENEZIALE, ANTHONY.....Civ. Eng. 63 Gesler St., Providence.	With Famiglietti Construction Co.	
WHITFORD, ADA ELIZABETH, Home Econ. 568 Chapel St., New Haven, Conn.	Teacher of Domestic Science, Boardman Trade School.	
WHITFORD, AMY ANN.....Home Econ. Farmington, Me.	Home Demonstration Agent.	
WILBOURN, VERNON JAMES....Appl. Sci. 17 Alger Ave., Providence.	Asst. Superintendent, Field's Point Mfg. Co.	
WILEY, JOHN DOUGLASS.....Agr. Bridgeton, N. J.	Foreman, The Seabrook Farms.	
WITTMAN, VICTOR SIMON.....Agr. R. F. D., Wakefield.	Farmer.	

1921

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ANDERSON, FLORA MCPHERSON, Narragansett Ave., Newport, R. I.	Home Econ.	
BAACKE, HENRY FREDERICK... 10 Ridge St., Arlington, R. I.	Appl. Sci.	Instructor, Colby Academy.
BAKER, HAROLD JAMES HALL..... 19 Granite St., Westerly, R. I.	Agr.	
BOGOSIAN, HARRY DER..... 169 Jewett St., Providence.	Civ. Eng.	
BRIGHTMAN, FRANCIS PIERCE.. 250 Union St., Schenectady, N. Y.	Elec. Eng.	
BUTLER, ROSE ALICIA..... 510 Thames St., Newport, R. I.	Education	Va. Normal School, Petersburg, Va.
CAMPBELL, MARY CATHARINE, 72 Anthony Ave., Providence.	Home Econ.	
DAVIS, ELIZABETH EDITH... 172 Reynolds Ave., Providence.	Home Econ.	Instructor in Sewing, Hope St. High, Providence, R. I.
DEERY, EDWIN MARSHALL..... 7 Warren Square, Jamaica Plain, Mass.	Agr.	
EASTWOOD, EDMUND CECIL..... 354 Manton Ave., Providence.	Agr.	United Fruit Company, 131 State St., Boston, Mass.
GERSTLE, GLADY'S DARLING.. 87 Blackstone St., Woonsocket, R. I.	Home Econ.	
HAWES, RUSSELL CHENEY..... 43 Centre St., East Providence.	Agr.	
HOLLEY, ALBERT HENRY..... 37 Cambridge St., Providence.	Chem. Eng.	
KOHLBERG, ESTHER LUCILE.. Barrington, R. I.	Home Econ.	Assistant, Providence Technical High School.
LEVY, SAMUEL JOSEPH..... 210 Cranston St., Providence.	Civ. Eng.	
MALONEY, JOHN JOSEPH..... 155 Robinson Ave., Pawtucket, R. I.	Elec. Eng.	
MARTELLI, PASQUALE..... Essex, Conn.	Civ. Eng.	
McKEE, SAMUEL ALLEN..... 159 Meadow Road, Woonsocket, R. I.	Mech. Eng.	

- MESSERLIAN, LEON JOHN....Chem. Eng.
76 Bartlett Ave., Edgewood, R. I.
- MOORE, WALTER WEBSTER.....Agr.
- NORDQUIST, CLARENCE EDWARD,
83 Hamlin St., Mech. Eng.
Elmwood, R. I.
- O'BRIEN, JAMES.....Appl. Sci.
86 Second Ave., Woonsocket, R. I.
- O'CONNELL, HOWARD JOSEPH.....Agr.
Box 295, Stonington, Conn.
- O'NEILL, JOSEPH EDWARD.....Civ. Eng.
35 Packard St., Brockton, Mass.
- PALMER, EARL GEER.....Elec. Eng.
Hope Valley, R. I.
- PECKHAM, JOSEPH WALLACE..Elec. Eng.
213 Seward Place,
Schenectady, N. Y.
- PEZZULLO, ROCCO.....Appl. Sci. Graduate Student, R. I. S. C.
Kingston, R. I.
- RECORDS, LAWRENCE AUSTIN.....Agr.
R. F. D. Saundertown, R. I.
- SHEEHAN, IRENE MAY.....Home Econ. Teacher.
2102 Broad St., Edgewood, R. I.
- SHERMAN, ISAAC THORNTON.....Agr.
16 Oxford St., Cambridge, Mass.
- SMITH, WALDO ALBERT.....Agr.
Slocum, R. I.
- STILLMAN, LOUIS.....Elec. Eng.
1753 Park Place, Brooklyn, N. Y.
- TORGAN, NATHAN.....Elec. Eng. Student Engineer, N. Y. Tel. Co.
638 Broad St., Providence. 43 West 128th St., N. Y. City.
- TUZIO, ARTHUR JOSEPH.....Civ. Eng.
35 Federal St., Providence.
- WALES, CHARLES HOWARD...Mech. Eng.
142 North Union St., Olean, N. Y.
- WALKER, FREDERICK EARLE..Mech. Eng.
47 Grant Ave., Arlington, R. I.
- ZERBARINI, ANGELO JOSEPH...Elec. Eng.
104 Broad St., New York City.

Advanced Degrees

1907

MASTER OF SCIENCE.

RODMAN, WALTER SHELDON.....B. S., R. I. S. C., 1904

1910

MASTER OF SCIENCE.

WHITING, ALBERT LEMUEL.....B. S., Mass. Agr. College, 1908

1911

MASTER OF SCIENCE.

HAMMETT, FREDERICK SIMONS.....A. B., Tufts College, 1908

1914

MASTER OF SCIENCE.

CALDWELL, DOROTHY WOLCOTT.....B. S., R. I. State College, 1912

ELKINS, MARGUERITE WHITE.....B. S., R. I. State College, 1913

1915

CIVIL ENGINEER.

MINOR, ARTHUR JACOB.....B. S., R. I. State College, 1911

1916

MASTER OF AGRICULTURE.

ADAMS, GEORGE EDWARD.....B. S., R. I. State College, 1894

LEWIS, HARRY REYNOLDS.....B. S., R. I. State College, 1907

WILKINSON, ALBERT EDMUND.....B. S., R. I. State College, 1906

1917

MASTER OF SCIENCE.

*FINE, SOLOMON.....B. S., R. I. State College, 1916

SPENCER, GEORGE EDWARD.....B. Sc., Syracuse University, 1914

1920

MASTER OF SCIENCE.

HEATH, BEBTHA MAY.....B. S., R. I. State College, 1910

*Deceased.

CIVIL ENGINEER.

JOHNSON, CHARLES VARNUM.....B. S., R. I. State College, 1917

1921

MASTER OF SCIENCE.

MATHER, WILLIAM.....B. S., Mass. Agricultural College, 1919

TIBBETTS, HELENA A.....B. S., Simmons, 1918

MECHANICAL ENGINEER.

BIGELOW, CARL MUZZY.....B. S., R. I. State College, 1912

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